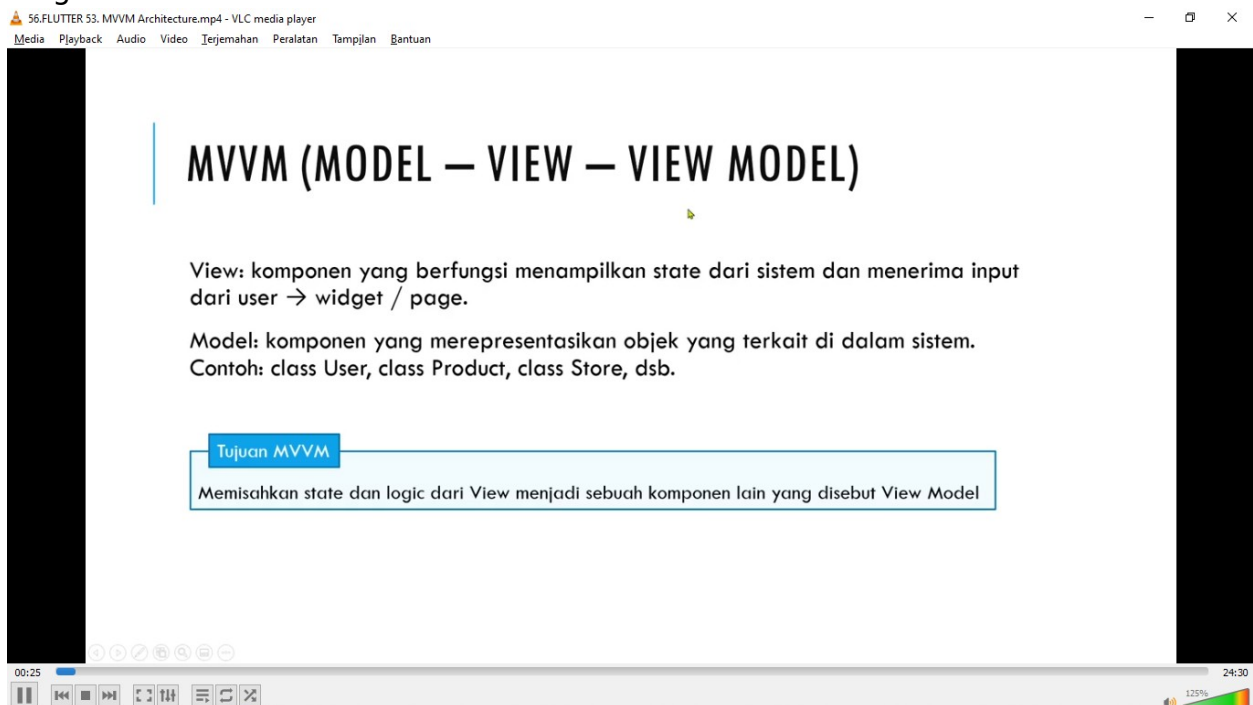


## Singkatan



56.FLUTTER 53. MVVM Architecture.mp4 - VLC media player

Media Playback Audio Video \_Terjemahan Peralatan Tampilan Bantuan

## MVVM (MODEL — VIEW — VIEW MODEL)

**Tugas View:**

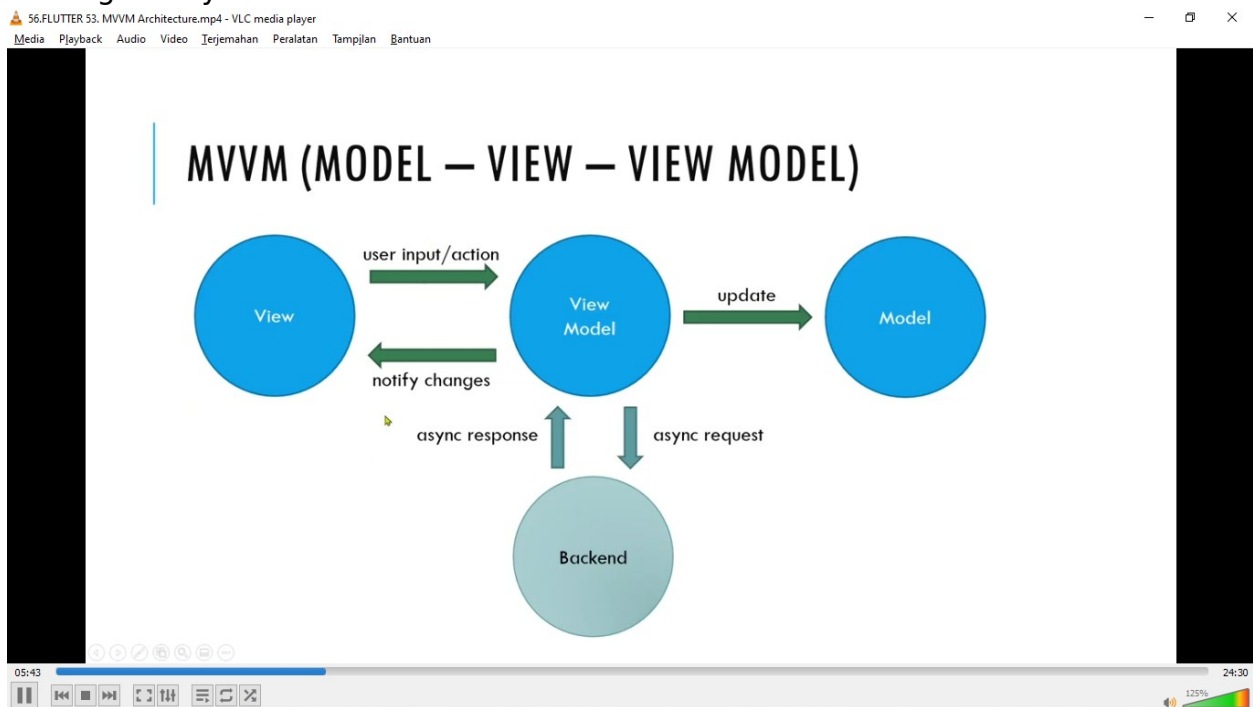
- Memberitahukan kepada View Model jika ada input dari user.
- Merespon perubahan state yang diberikan oleh View Model dan menampilkannya kepada user.

**Tugas View Model:**

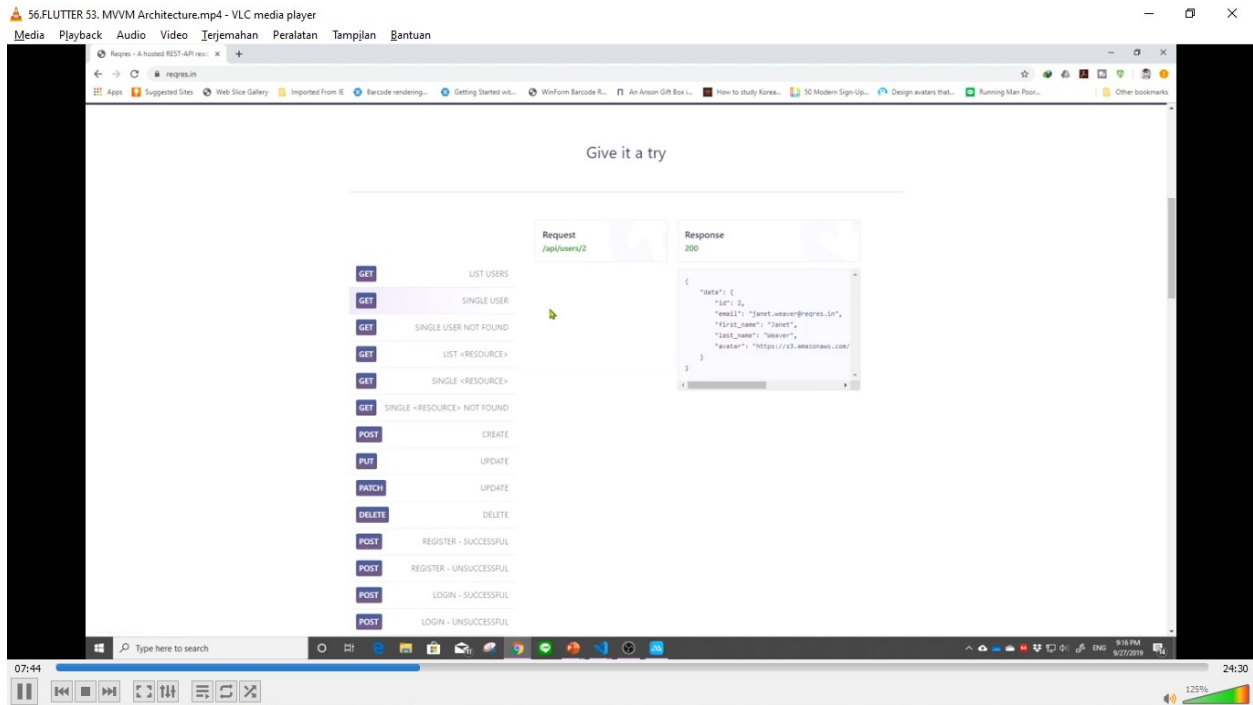
- Merespon input yang diberikan oleh View.
- View Model tidak tahu dan tidak terkait dengan View manapun. Ia hanya memberitahukan perubahan state pada view yang membutuhkan/terkait.

03:44 24:30 125%

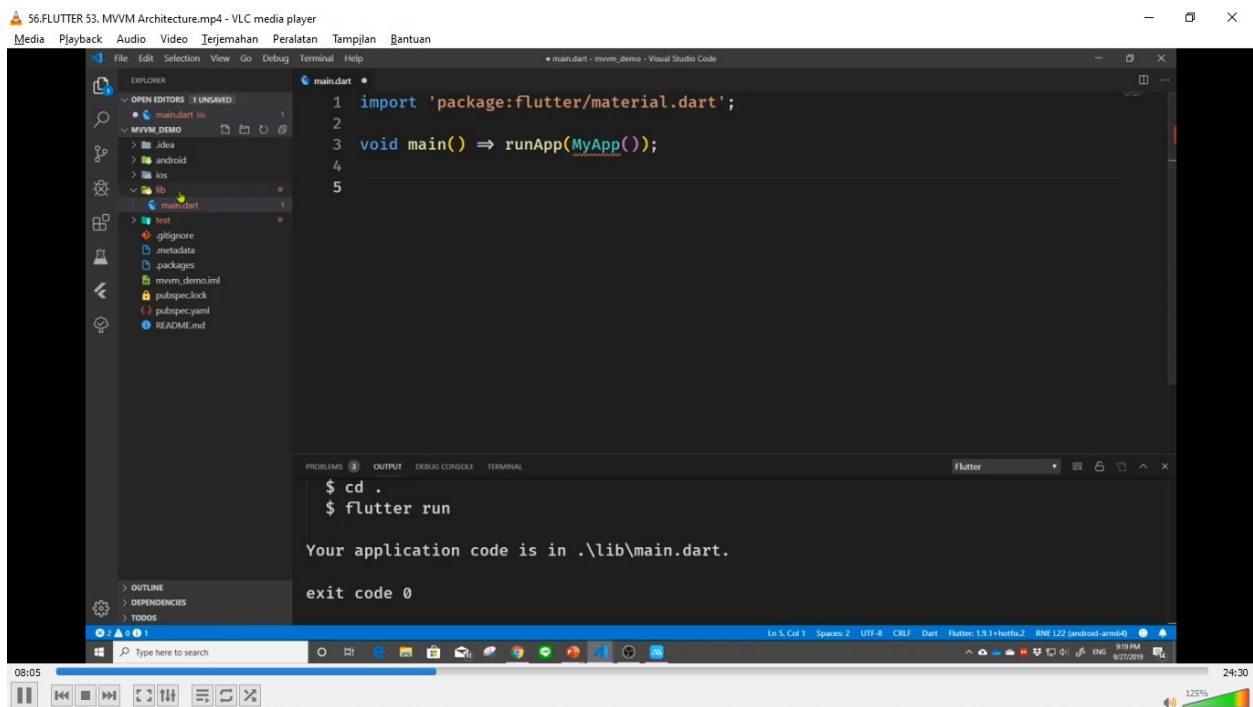
Ini diagram nya



sekarang praktek nya  
 Untuk kali ini kita gunakan api untuk data users  
 Di ambil sigle users



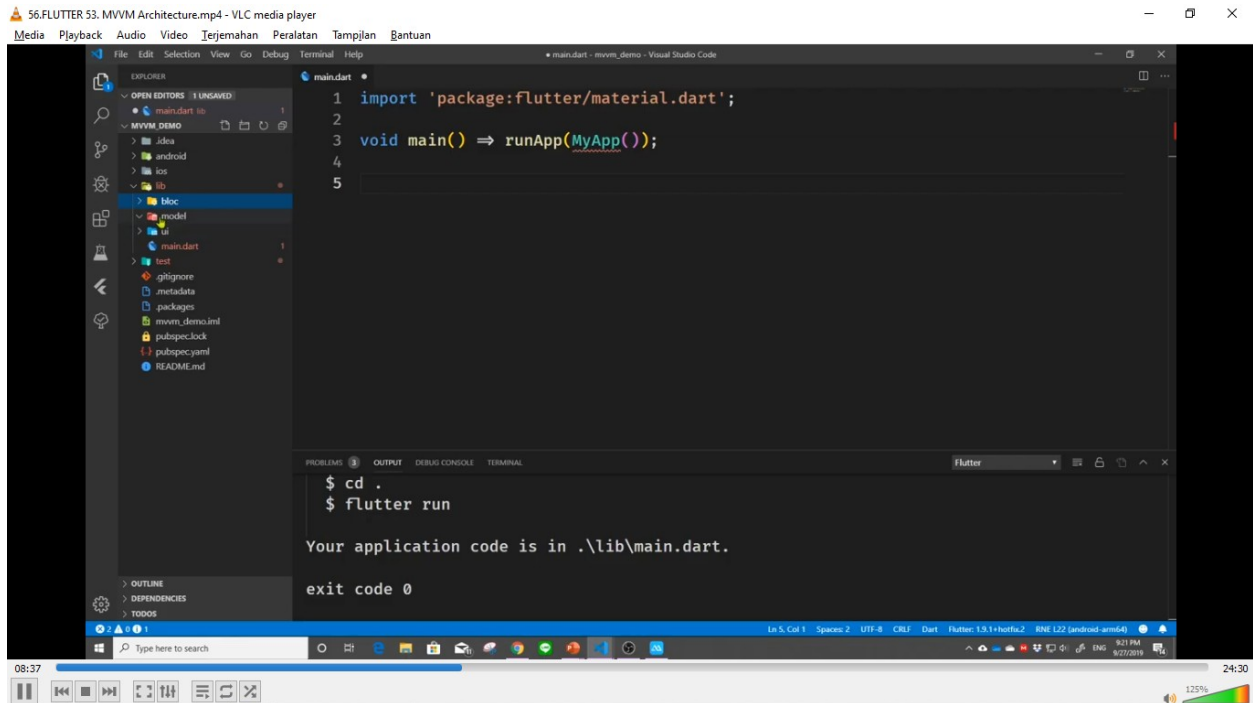
Kembali disini kita buat 3 folder didalam lib



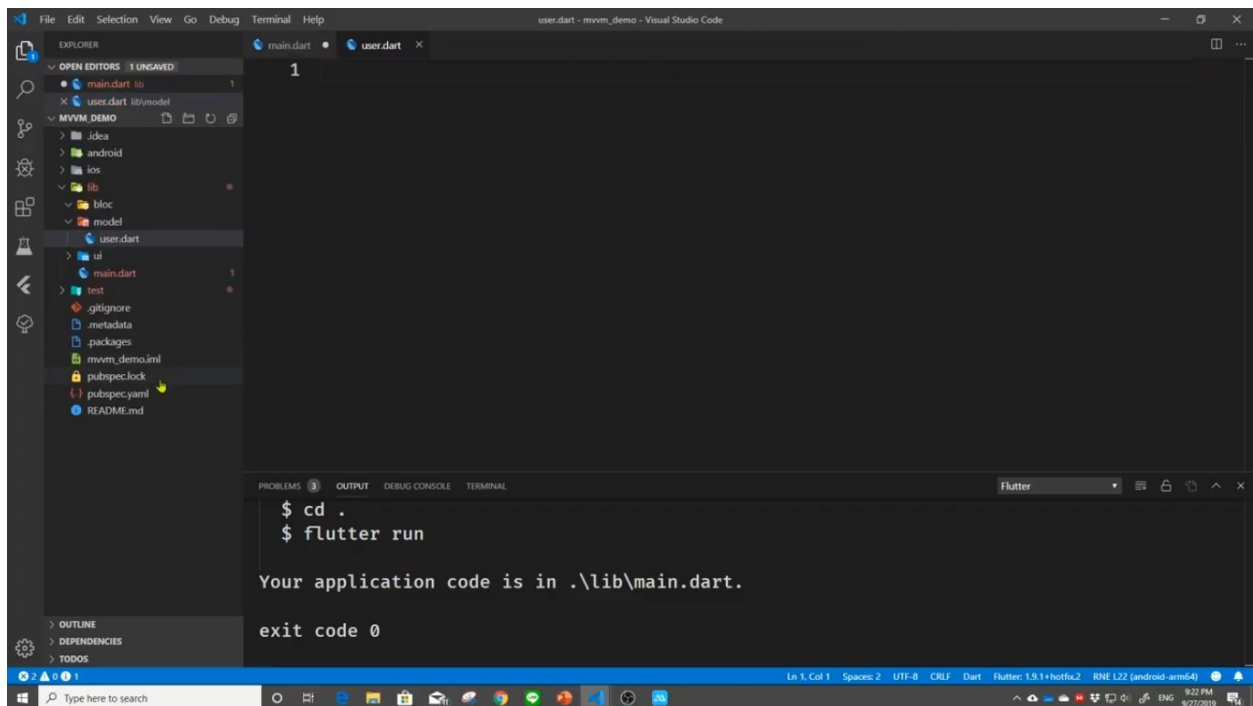
Buat model untuk letakan model nya

Kedua Ui untuk widget nya

Ketiga view\_model untuk view model dalam flutter lebih mengenal namanya bloc fungsi nya juga sama

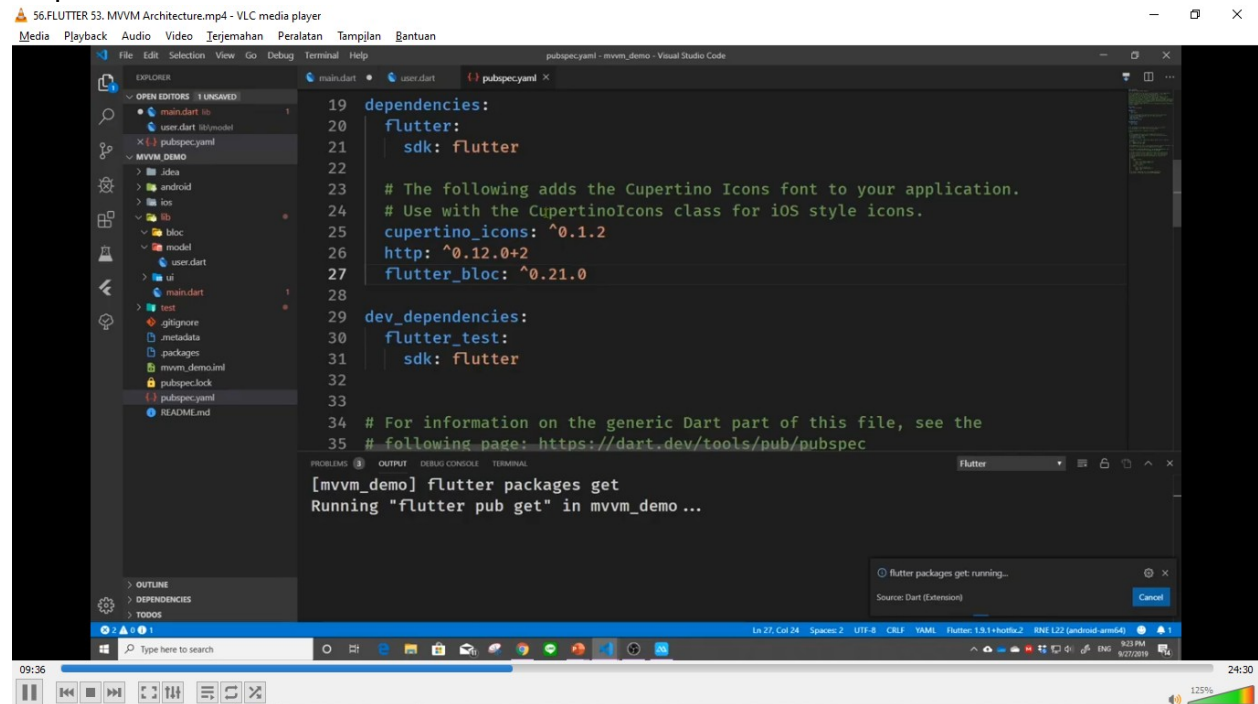


Buat satu model lagi service yaitu service ke backend terserah  
 Untuk gabung ke model pisahkan juga untuk service2 sendiri  
 Untuk kali gabung dgn model nya  
 Model user itu akan berisi method2 untuk mengambil user menggunakan api  
 Skarang buat dulu model nya  
 Dibuat user.dart

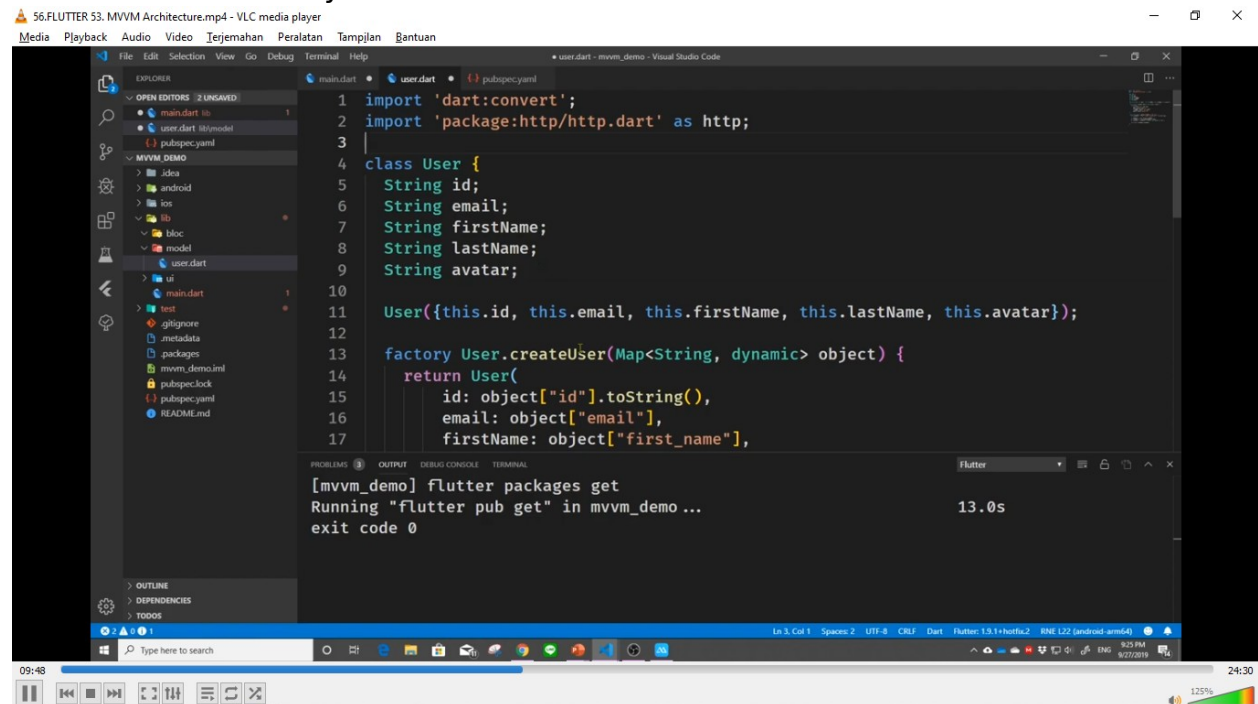


Lalu di pubspec pasang 2package  
 Yg akan digunakan

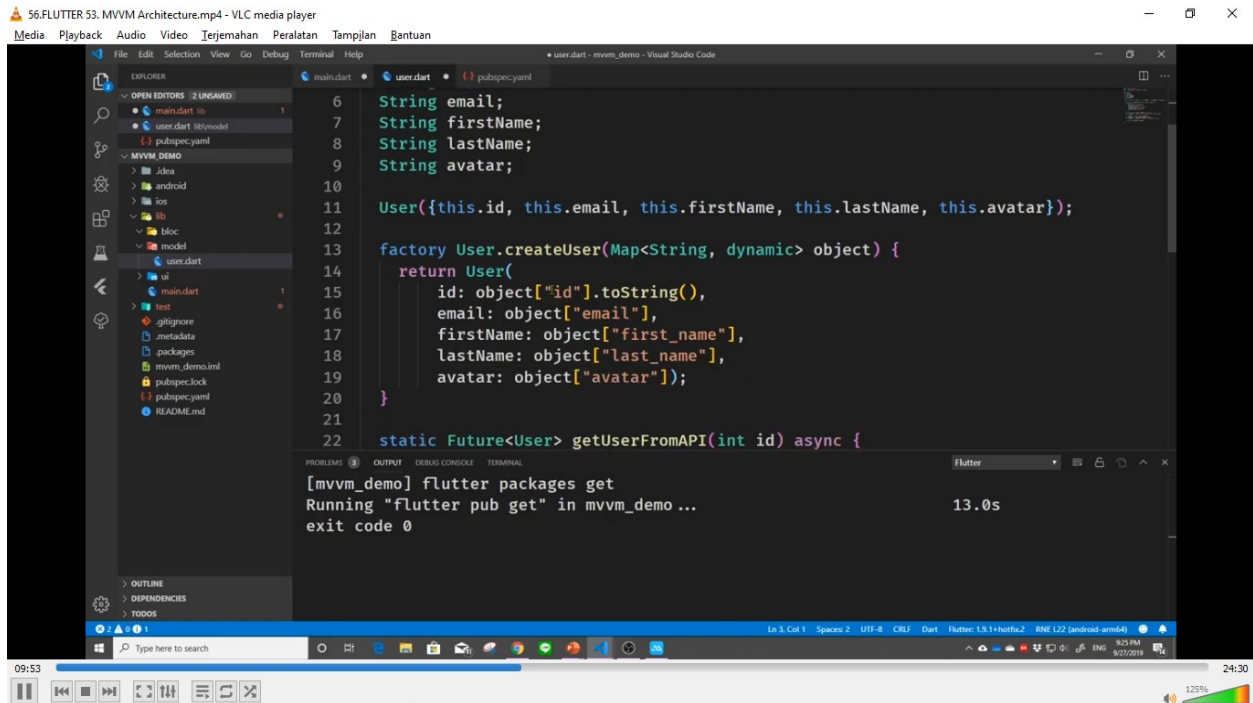
## http dan flutter bloc



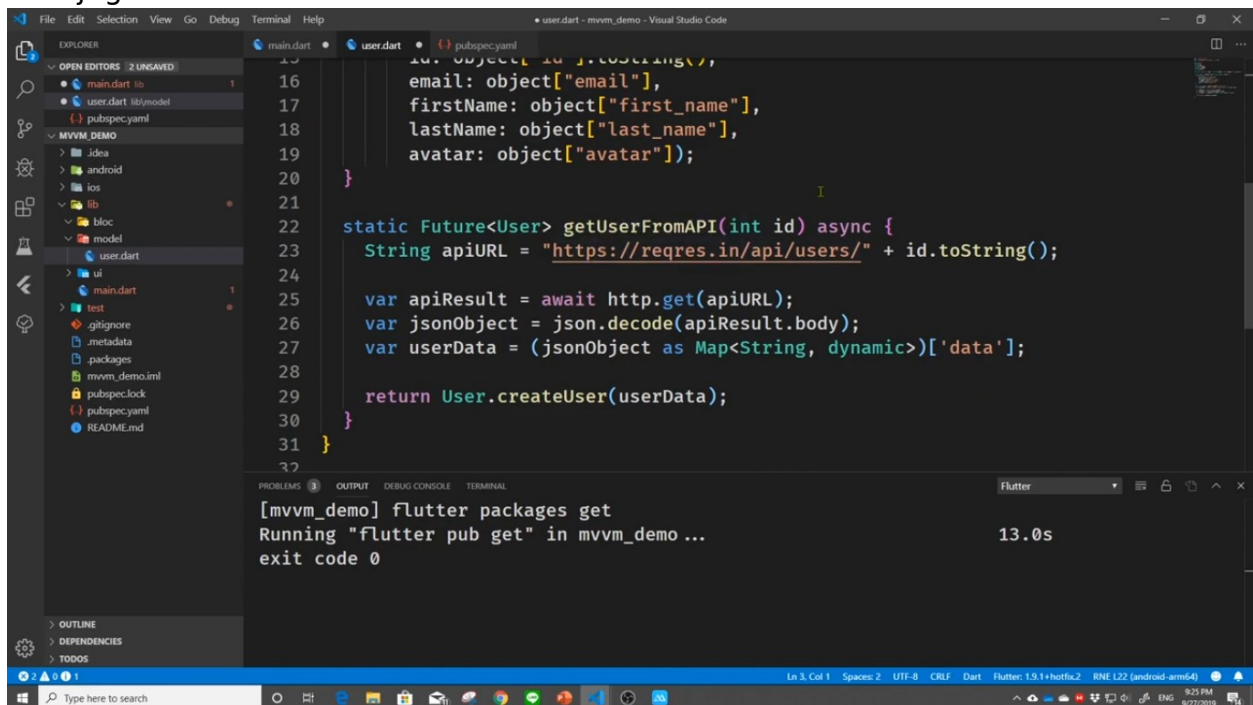
Sekarang buat user dart nya  
Ini adalah clas user nya



Ada controctornya  
Lalu ada factory method nya untuk membuat user hasil map dari json

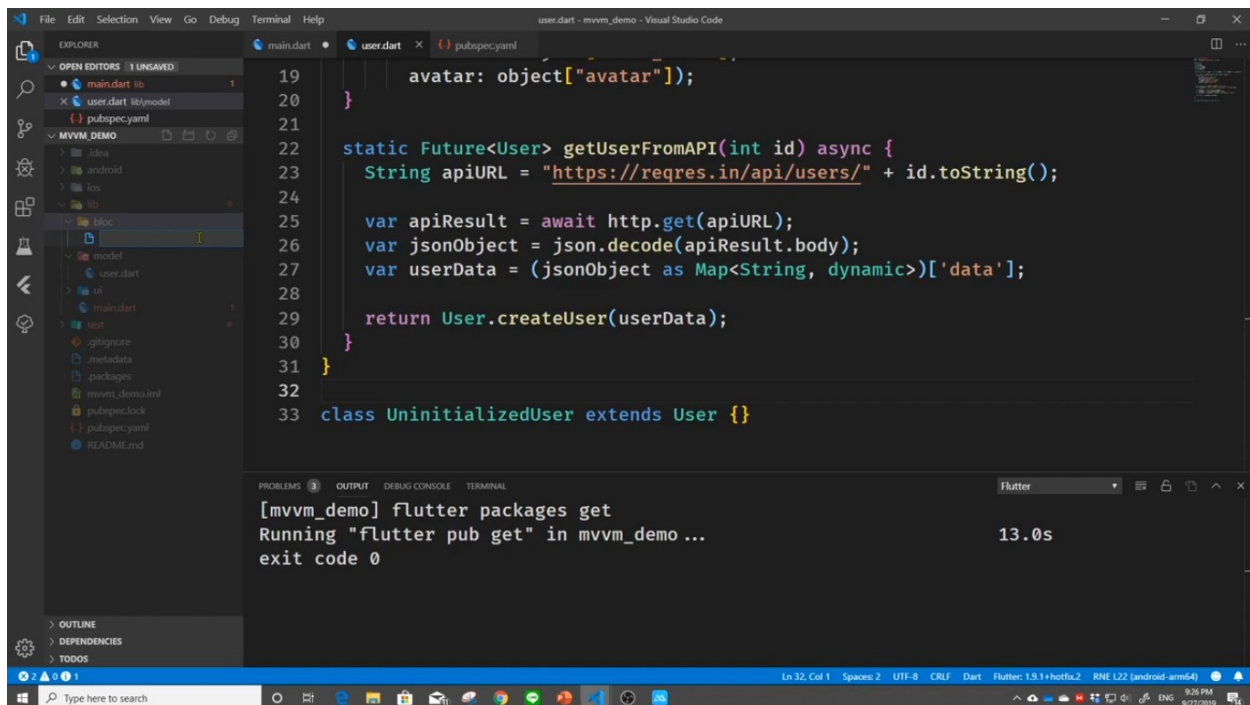


Lalu juga method



Tambahan disini adalah kita buat lagi satu buah class turunan user yaitu UninitializedUser fungsi untuk dipakai dibloc nanti





The screenshot shows the Visual Studio Code editor with the `user.dart` file open. The file contains the following code:

```
19     avatar: object["avatar"]);
20   }
21
22   static Future<User> getUserFromAPI(int id) async {
23     String apiURL = "https://reqres.in/api/users/" + id.toString();
24
25     var apiResult = await http.get(apiURL);
26     var jsonObject = json.decode(apiResult.body);
27     var userData = (jsonObject as Map<String, dynamic>)['data'];
28
29     return User.createUser(userData);
30   }
31 }
32
33 class UninitializedUser extends User {}
```

The terminal at the bottom shows the output of the command `flutter packages get` in the `mvvm_demo` directory, which completed successfully in 13.0s.

Berikutnya ke bloc

Buat `user_bloc.dart`

Lalu import

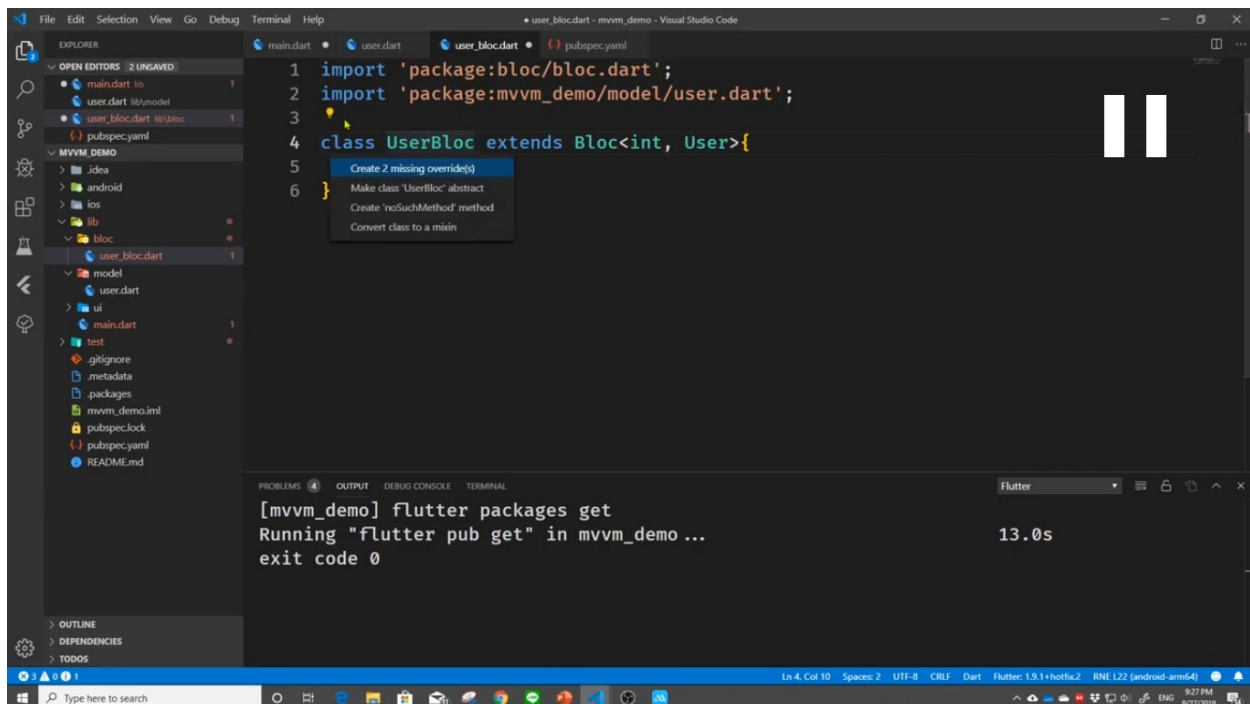
Lalu class `UserBloc` extend dari `Bloc`

Masukan berupoa inter `<int>`, dia minta id berapa usernya

Lalu dia akan kemablikan `user`

Untuk `user` sendiri kita ambil dari `model/user.dart`

Lalu ini ada 2 buah

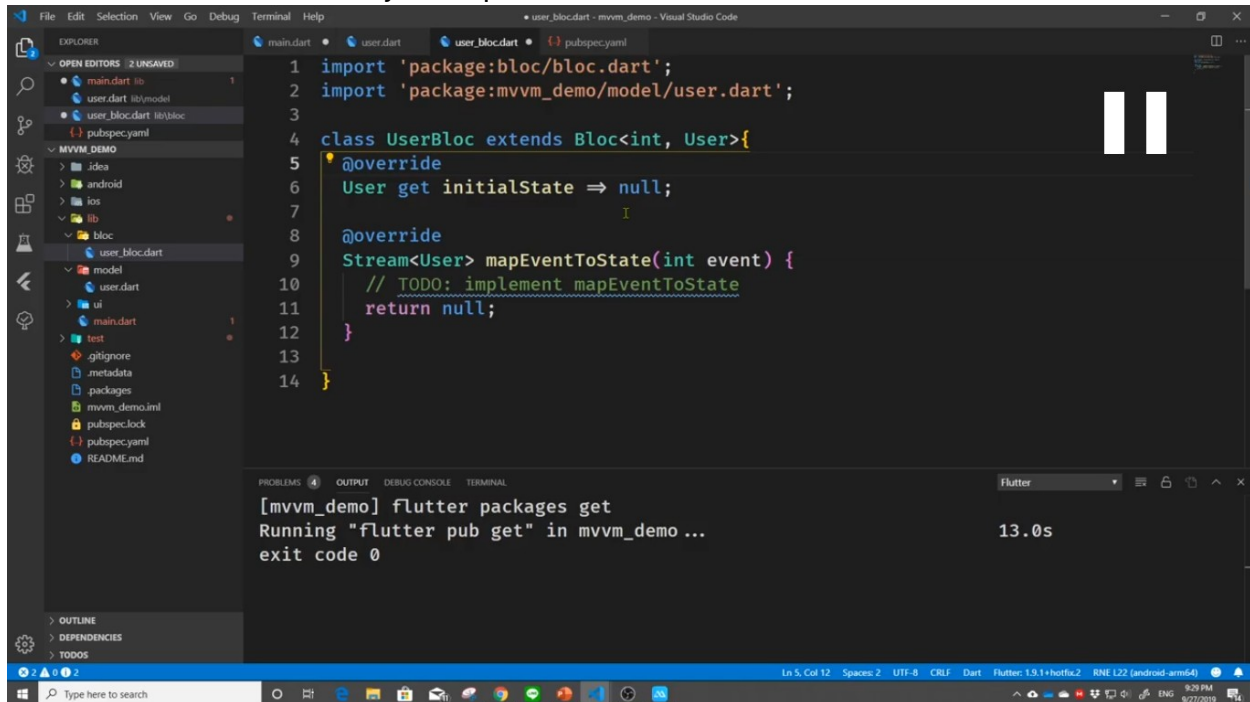


The screenshot shows the Visual Studio Code editor with the `user_bloc.dart` file open. The file contains the following code:

```
1 import 'package:bloc/bloc.dart';
2 import 'package:mvvm_demo/model/user.dart';
3
4 class UserBloc extends Bloc<int, User>{
5
6 }
```

The terminal at the bottom shows the output of the command `flutter packages get` in the `mvvm_demo` directory, which completed successfully in 13.0s.

Untuk bloc sendiri sudah dijelaskan  
Sekarang disini  
Kita kembalikan subah object seperti user ini

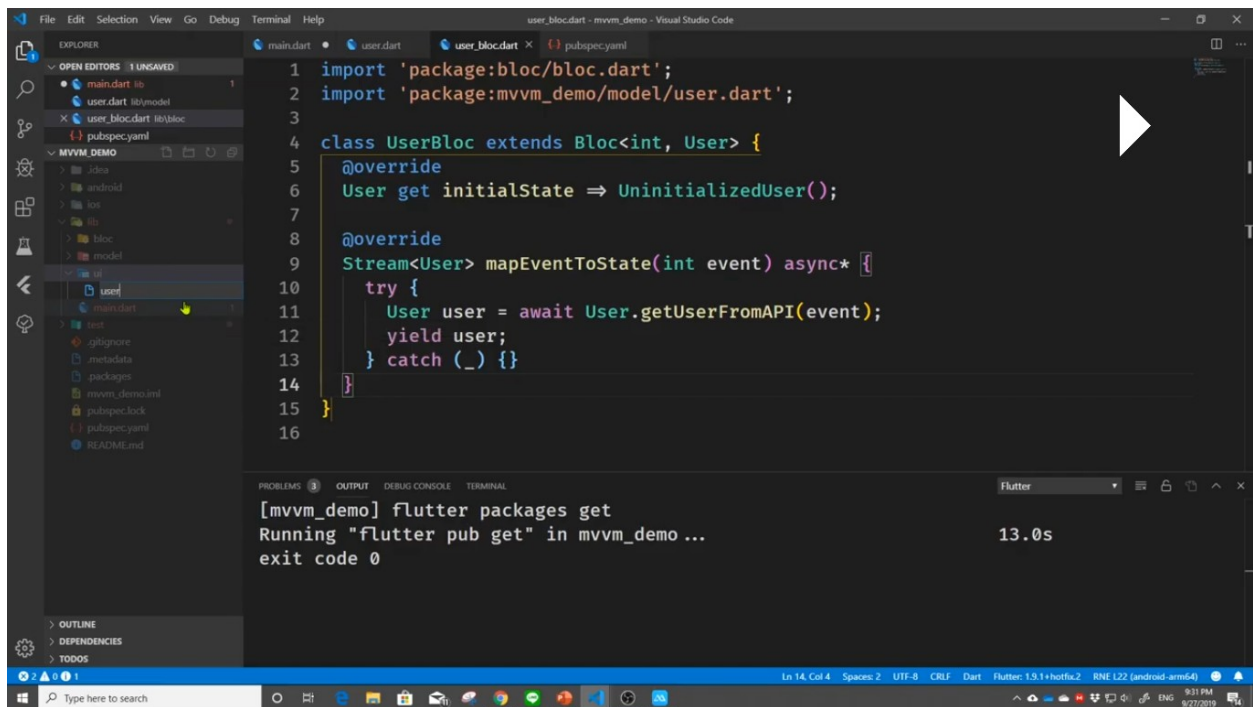


```
1 import 'package:bloc/bloc.dart';
2 import 'package:mvvm_demo/model/user.dart';
3
4 class UserBloc extends Bloc<int, User>{
5   @override
6   User get initialState => null;
7
8   @override
9   Stream<User> mapEventToState(int event) {
10    // TODO: implement mapEventToState
11    return null;
12  }
13
14 }
```

[mvvm\_demo] flutter packages get  
Running "flutter pub get" in mvvm\_demo ...  
exit code 0  
13.0s

Initial state tidak boleh null  
Makanya sudah buat uninitizedUser jadi ini untuk petanda ini user tapi belum di  
initilasi  
Jadi disini guna uninitialUser  
Jadi disini stream  
Kita try  
Catch  
Untuk jaga2 kalau api nya kalau ada yg asal2  
Nah disini kita apaaain disini ambil user lalu api  
Dgn id untuk masukan ke event ini  
Jadi di try  
Buat user = user.getUserFromApi(event) lalu id nya event  
Buat await karena async  
Lalu di yiend hasil nya dikeluarkan user;  
Sudah jadi bloc nya





## Sekarang buat ui

User\_cart.dart

Untuk menampilkan si user

Gunakan stl

Import material

Disini kembalikan container

Lalu isi nya widget doubleinfinity ikuti lebar yg sedia

Lalu margin nya 10

Padding 10

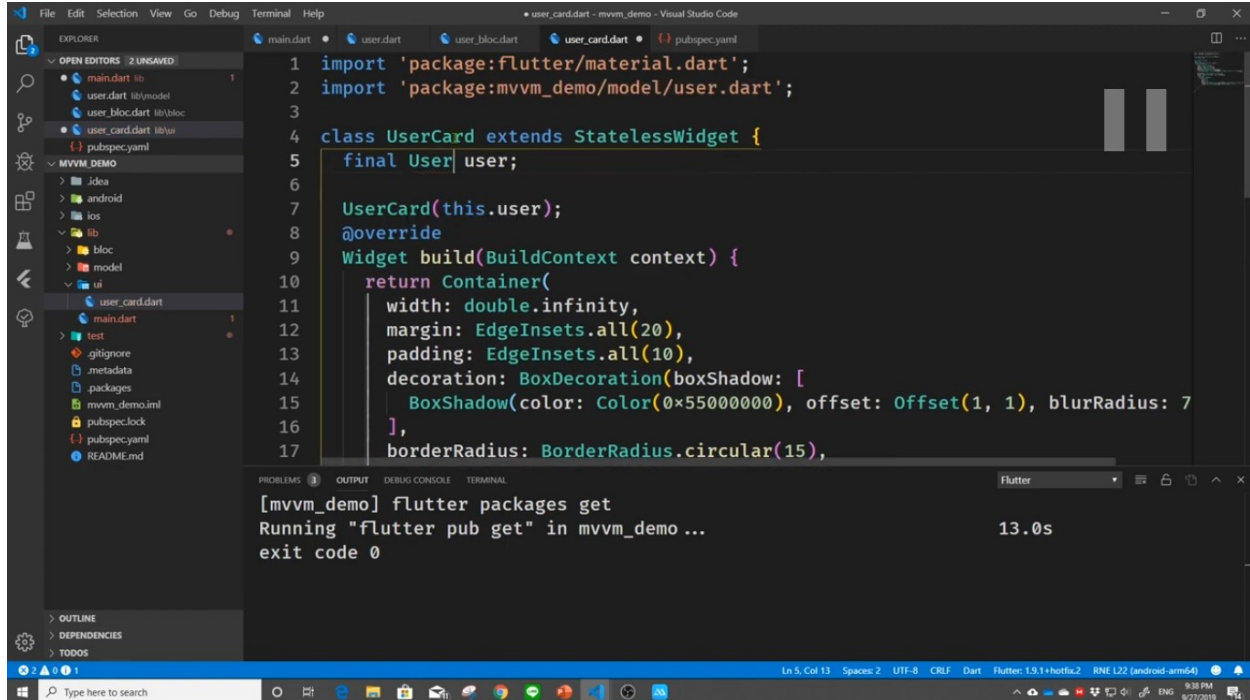
Decoration untuk shadow untuk bayangan

Lalu berikan border radius supaya melengkung

Border nya kasih warna



Lalu buat controktrur nya dia minta this.user  
Lalu import user nya



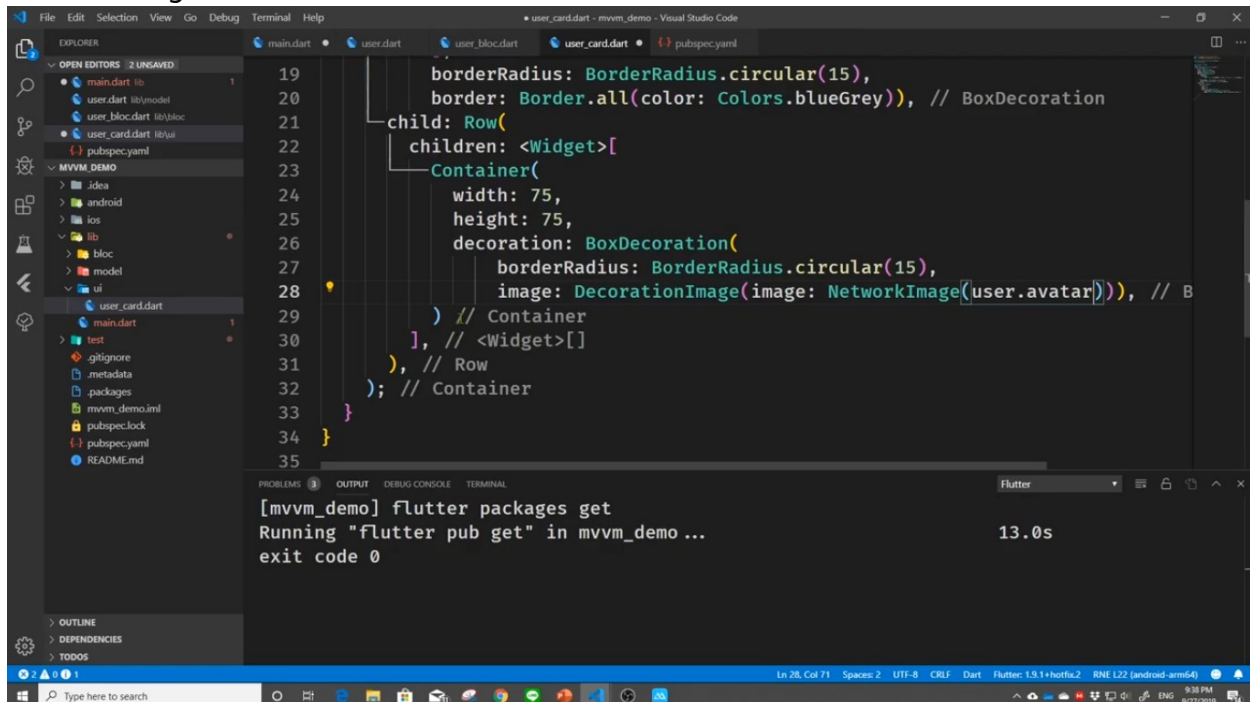
```
1 import 'package:flutter/material.dart';
2 import 'package:mvvm_demo/model/user.dart';
3
4 class UserCard extends StatelessWidget {
5   final User user;
6
7   UserCard(this.user);
8   @override
9   Widget build(BuildContext context) {
10    return Container(
11      width: double.infinity,
12      margin: EdgeInsets.all(20),
13      padding: EdgeInsets.all(10),
14      decoration: BoxDecoration(boxShadow: [
15        BoxShadow(color: Color(0x55000000), offset: Offset(1, 1), blurRadius: 7
16      ],
17      borderRadius: BorderRadius.circular(15),
```

Flutter

[mvvm\_demo] flutter packages get  
Running "flutter pub get" in mvvm\_demo ...  
exit code 0

13.0s

Disini bisa ganti user.avatar



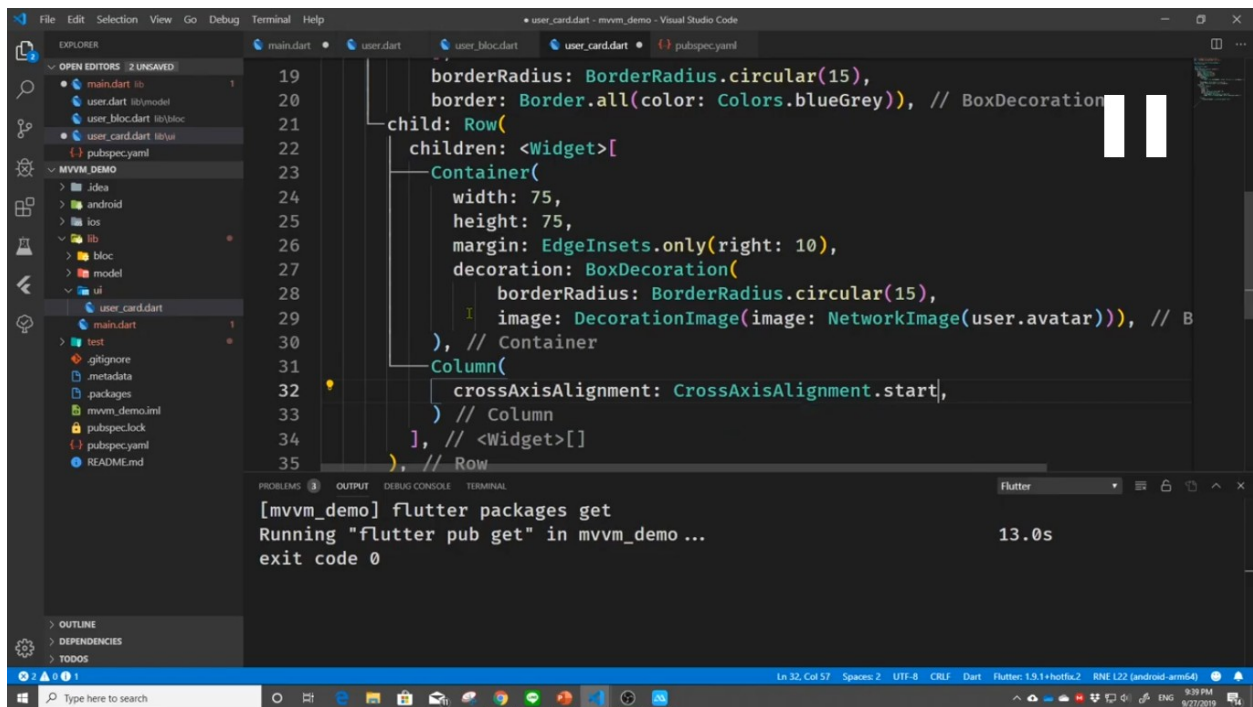
```
19   borderRadius: BorderRadius.circular(15),
20   border: Border.all(color: Colors.blueGrey)), // BoxDecoration
21   child: Row(
22     children: <Widget>[
23       Container(
24         width: 75,
25         height: 75,
26         decoration: BoxDecoration(
27           borderRadius: BorderRadius.circular(15),
28           image: DecorationImage(image: NetworkImage(user.avatar))), // B
29       ) // Container
30     ], // <Widget>[
31   ), // Row
32 ); // Container
33 }
34 }
35 }
```

Flutter

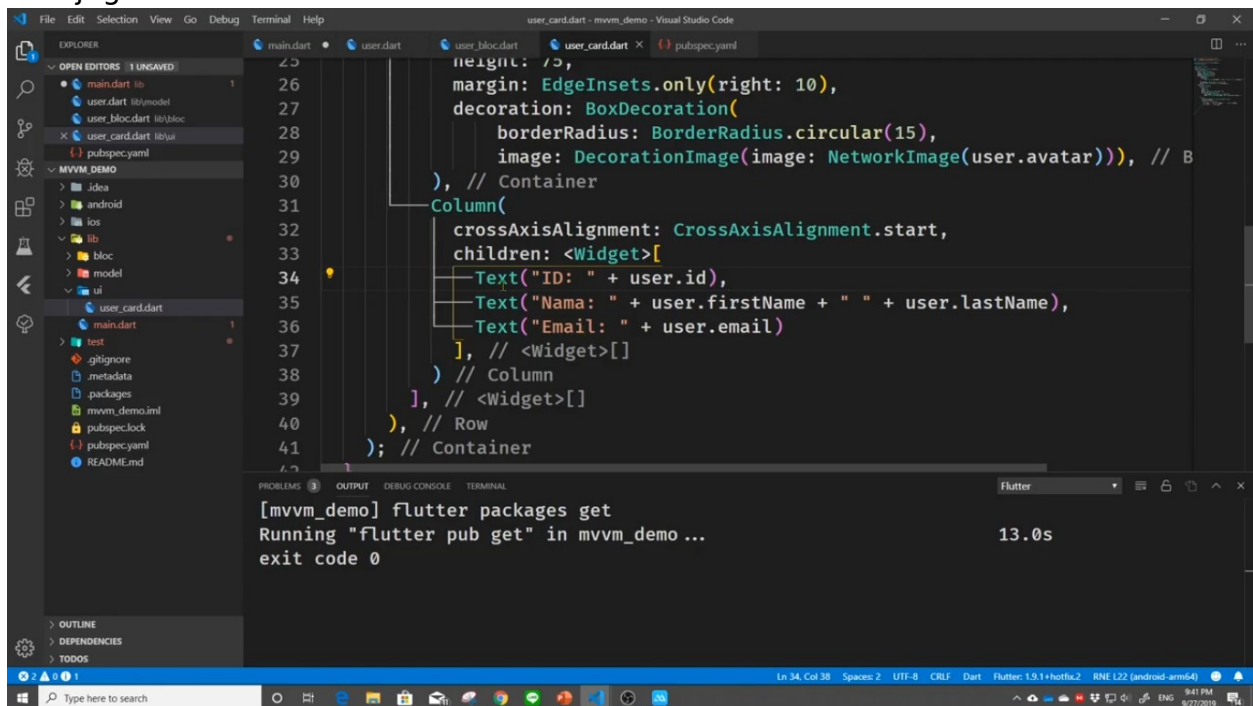
[mvvm\_demo] flutter packages get  
Running "flutter pub get" in mvvm\_demo ...  
exit code 0

13.0s

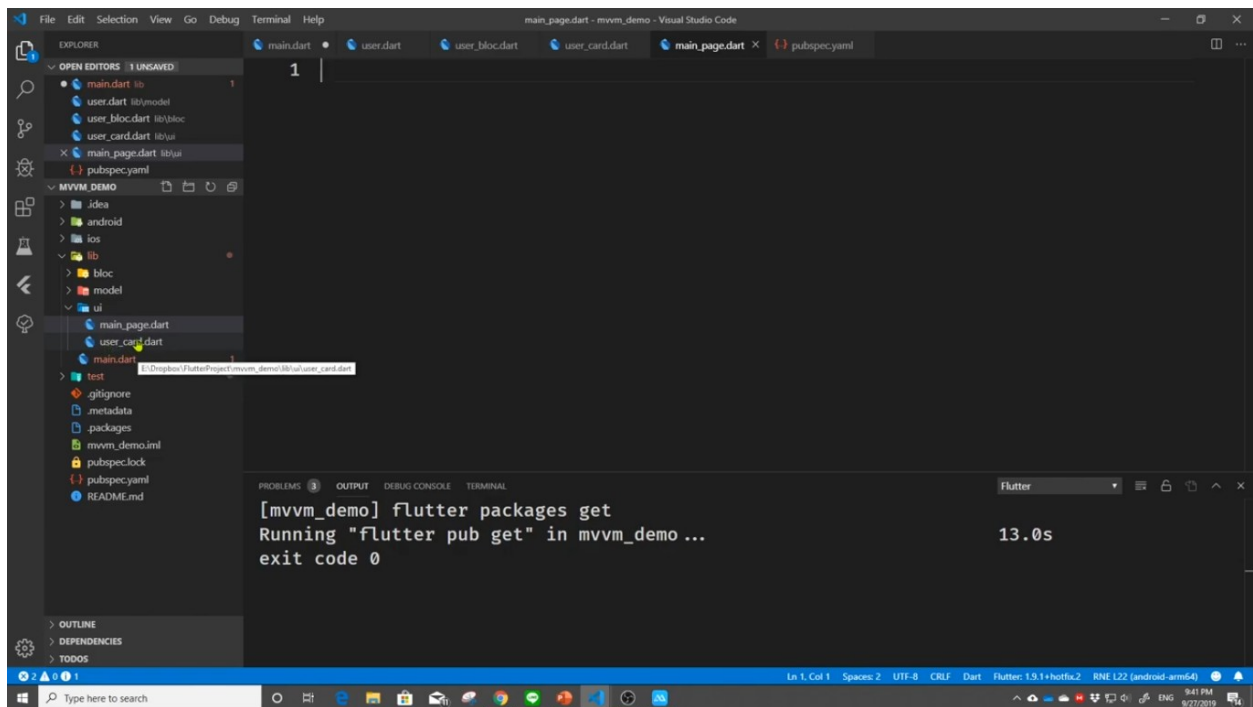
Untuk si gambarnya  
Sekarang buat column untuk buat text nya tapi dia kebawah  
Kita buat column  
Kasih jarak kesamping dgn text nya jadi kasih margin only right 10  
Di columncross pasang start rata kiri



Children itu pasang text tu;isan itu "nama: " + user " " + lastname),  
 Dan email  
 Dan juga id



Jadi kira2 ini untuk ui nya  
 Sekarang buat lagi untuk main\_page.dart



Main page untuk pisahkan lagi boleh buat untuk folder baru

Untu main page kita import

Buat stl

Material

Scaffold appBar

Kasih judul demo MVVM

Body nya

Column

CrossAxisAlignment center

Children kasih

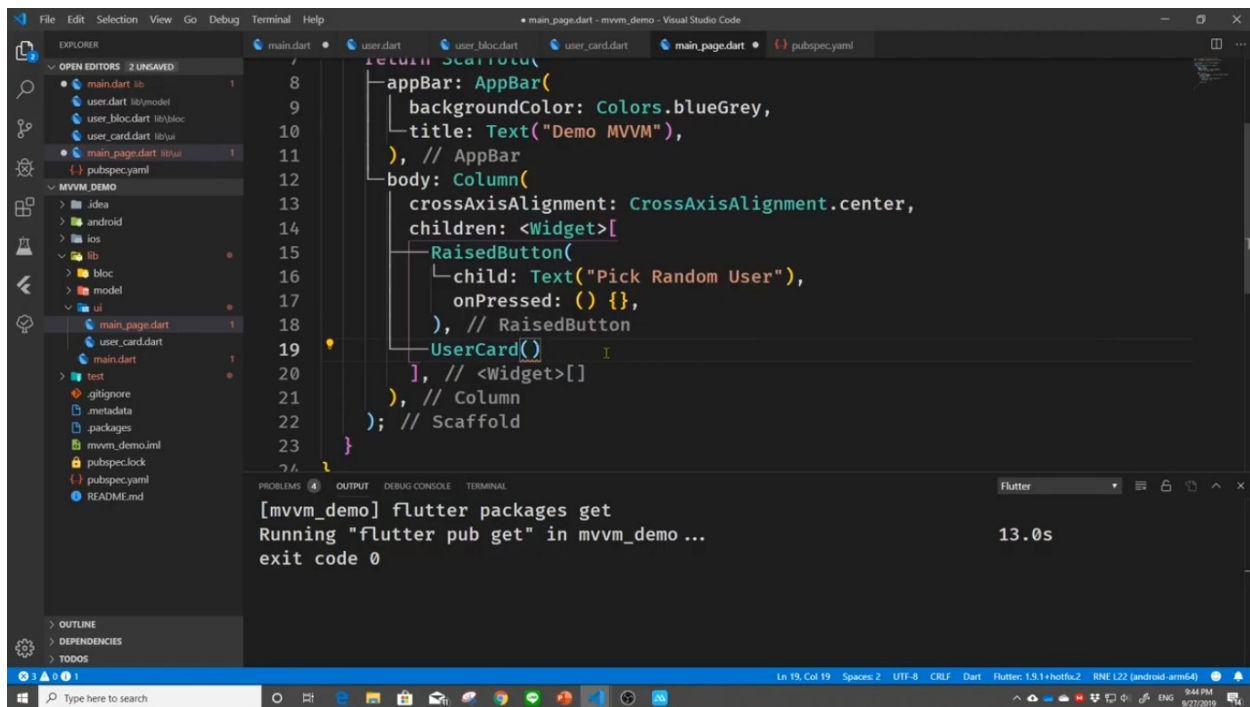
raisedButton tulisan random user

onPressed kosong idahulu

lalu pasang

UserCard nya

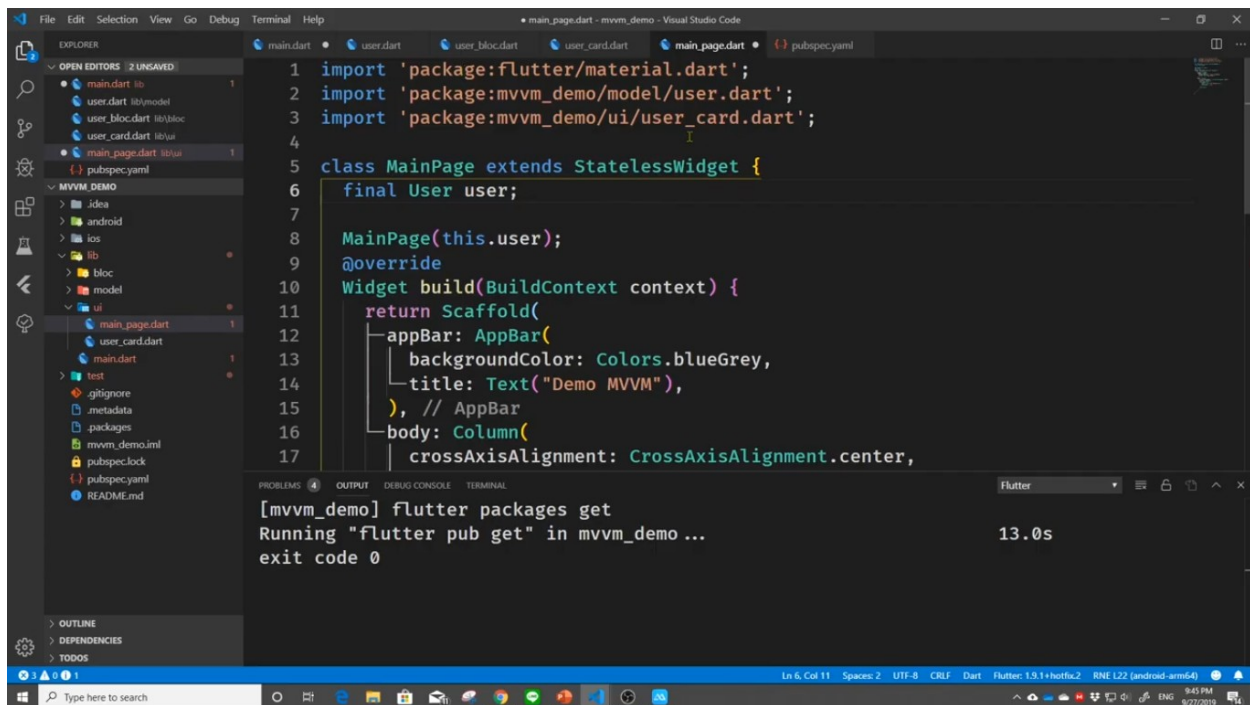




```
main_page.dart
1
2
3
4
5
6
7
8 appBar: AppBar(
9   backgroundColor: Colors.blueGrey,
10  title: Text("Demo MVVM"),
11 ), // AppBar
12 body: Column(
13   crossAxisAlignment: CrossAxisAlignment.center,
14   children: <Widget>[
15     RaisedButton(
16       child: Text("Pick Random User"),
17       onPressed: () {},
18     ), // RaisedButton
19     UserCard()
20   ], // <Widget>[]
21 ), // Column
22 ); // Scaffold
23 }
```

```
[mvvm_demo] flutter packages get
Running "flutter pub get" in mvvm_demo ...
exit code 0
```

userCard butuh user carena belum pasang bloc nya belum ada  
pasang juga sama di atas  
User user; pakai final  
Buat contructornya  
Kita ambil dari user.dart

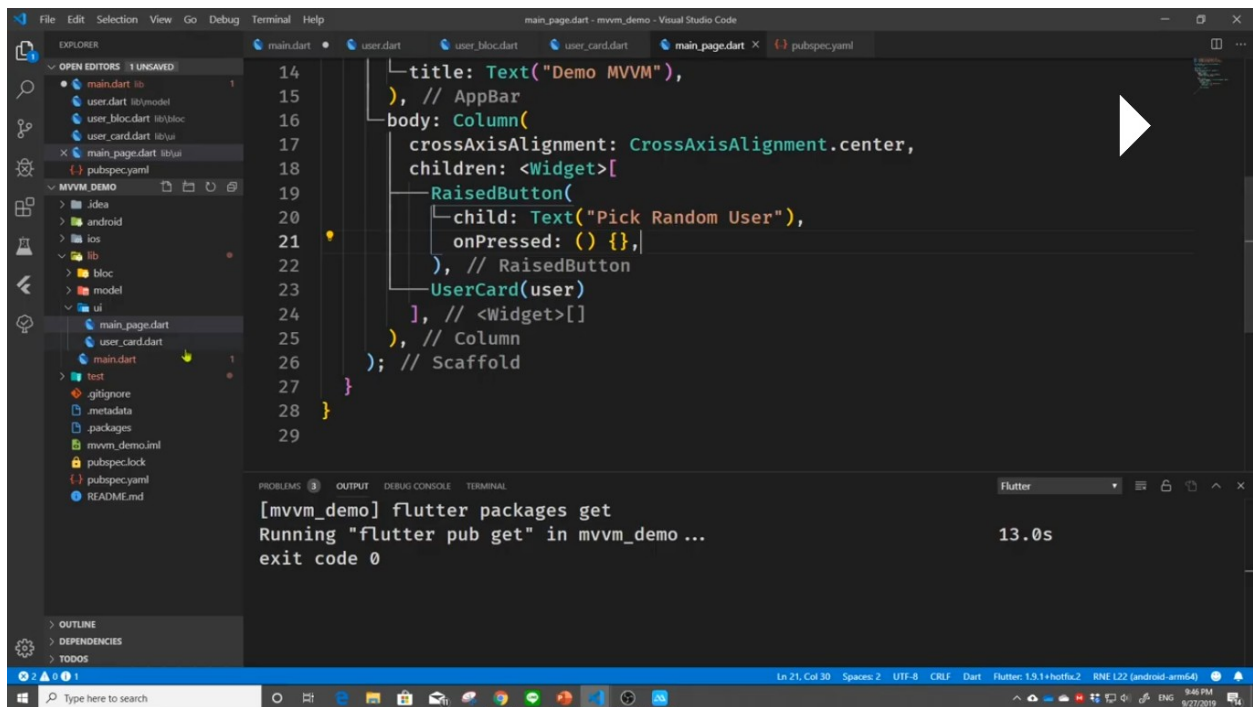


```
main_page.dart
1 import 'package:flutter/material.dart';
2 import 'package:mvvm_demo/model/user.dart';
3 import 'package:mvvm_demo/ui/user_card.dart';
4
5 class MainPage extends StatelessWidget {
6   final User user;
7
8   MainPage(this.user);
9   @override
10  Widget build(BuildContext context) {
11    return Scaffold(
12      appBar: AppBar(
13        backgroundColor: Colors.blueGrey,
14        title: Text("Demo MVVM"),
15      ), // AppBar
16      body: Column(
17        crossAxisAlignment: CrossAxisAlignment.center,
```

```
[mvvm_demo] flutter packages get
Running "flutter pub get" in mvvm_demo ...
exit code 0
```

Lalu disini kita ambil user nya





Kita ke main.dart seperti biasa disini

Stl

Material

Return nya MaterialApp

Hapus banner nya

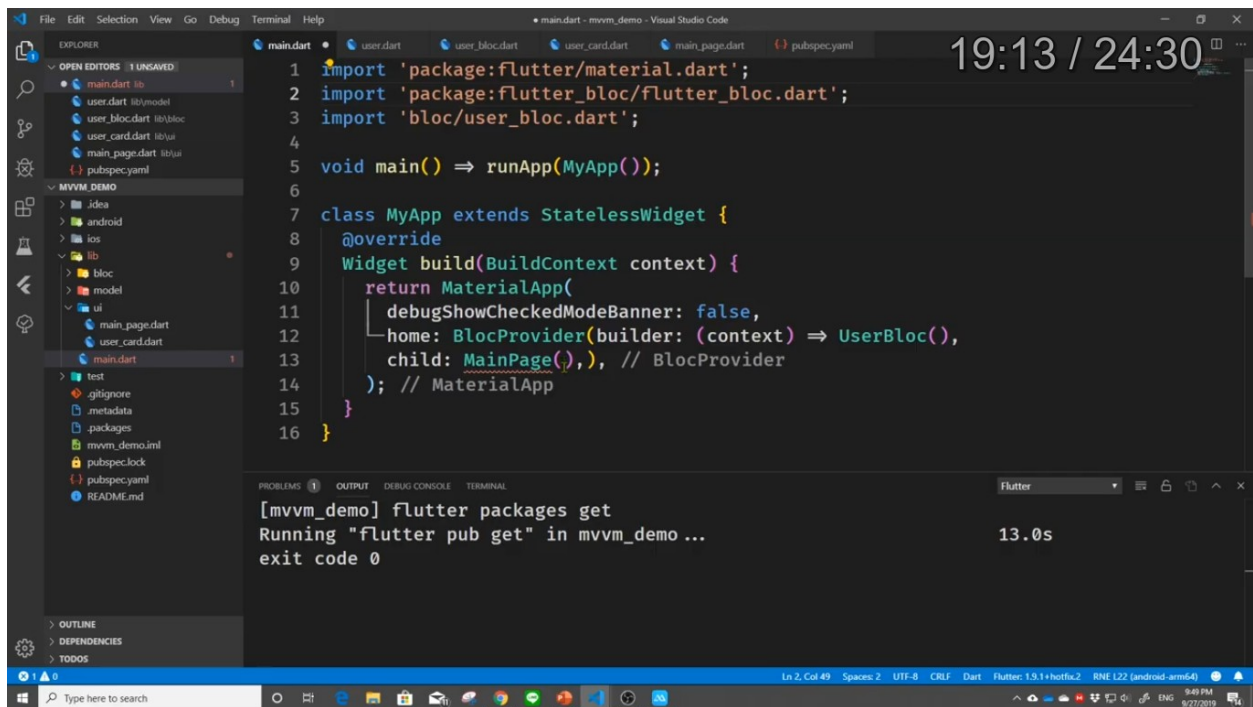
Home nya BlocProvider

Builder (context) => UserBloc()

Lalu children MainPage

UserBloc import dahulu

kembali ke MainPage

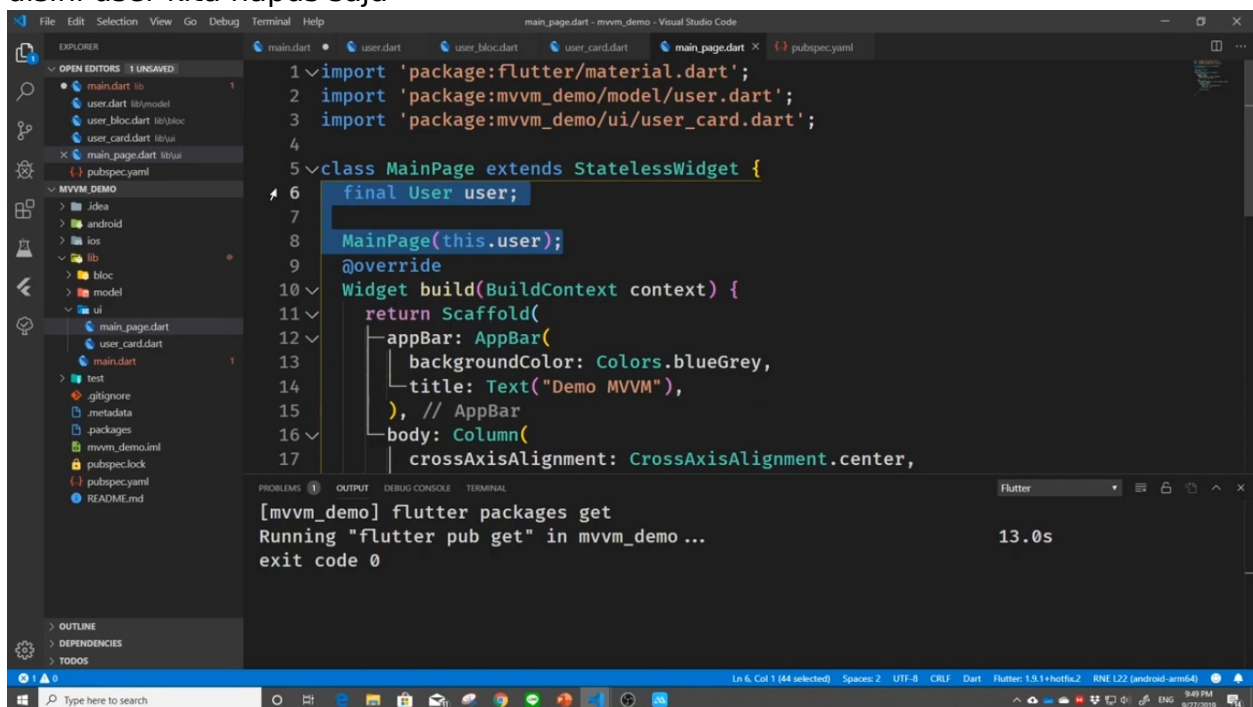


```
1 import 'package:flutter/material.dart';
2 import 'package:flutter_bloc/flutter_bloc.dart';
3 import 'bloc/user_bloc.dart';
4
5 void main() => runApp(MyApp());
6
7 class MyApp extends StatelessWidget {
8   @override
9   Widget build(BuildContext context) {
10     return MaterialApp(
11       debugShowCheckedModeBanner: false,
12       home: BlocProvider(builder: (context) => UserBloc(),
13         child: MainPage(), // BlocProvider
14       ); // MaterialApp
15   }
16 }
```

[mvvm\_demo] flutter packages get  
Running "flutter pub get" in mvvm\_demo ...  
exit code 0

13.0s

disini user kita hapus saja



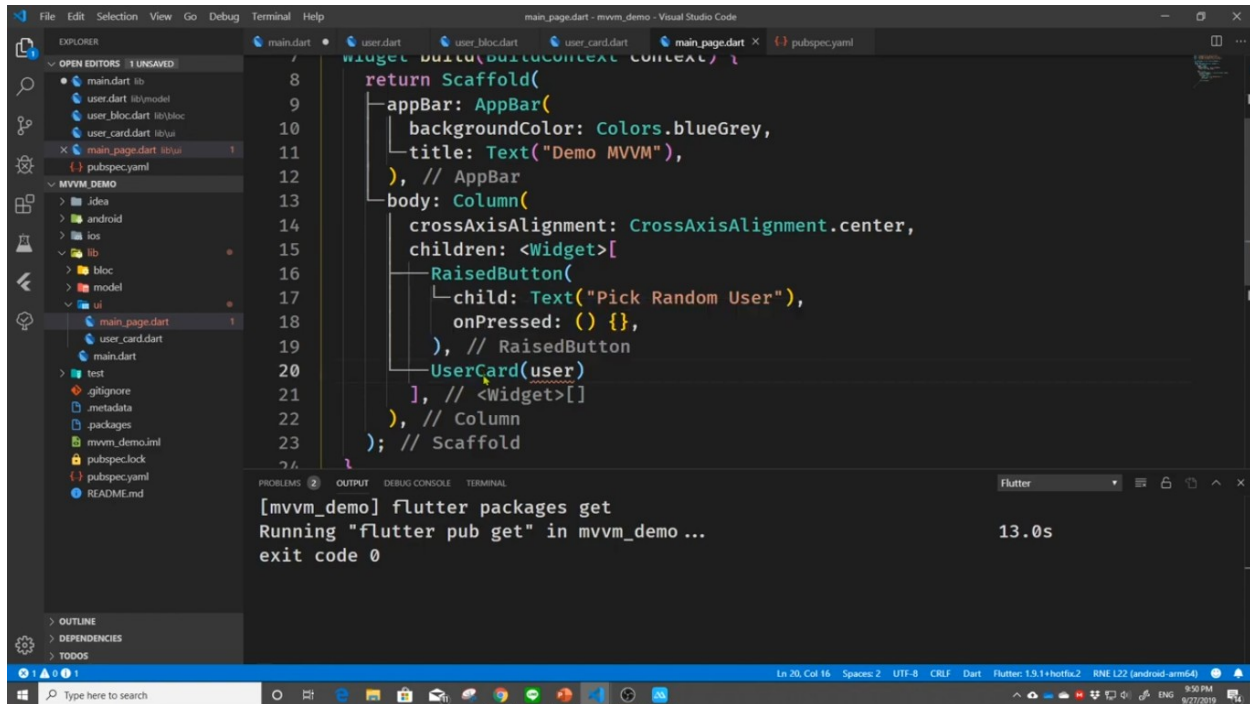
```
1 import 'package:flutter/material.dart';
2 import 'package:mvvm_demo/model/user.dart';
3 import 'package:mvvm_demo/ui/user_card.dart';
4
5 class MainPage extends StatelessWidget {
6   final User user;
7
8   MainPage(this.user);
9
10   @override
11   Widget build(BuildContext context) {
12     return Scaffold(
13       appBar: AppBar(
14         backgroundColor: Colors.blueGrey,
15         title: Text("Demo MVVM"),
16       ), // AppBar
17       body: Column(
18         crossAxisAlignment: CrossAxisAlignment.center,
```

[mvvm\_demo] flutter packages get  
Running "flutter pub get" in mvvm\_demo ...  
exit code 0

13.0s

Kembali ke main.dart  
mainPage kita import dart nya

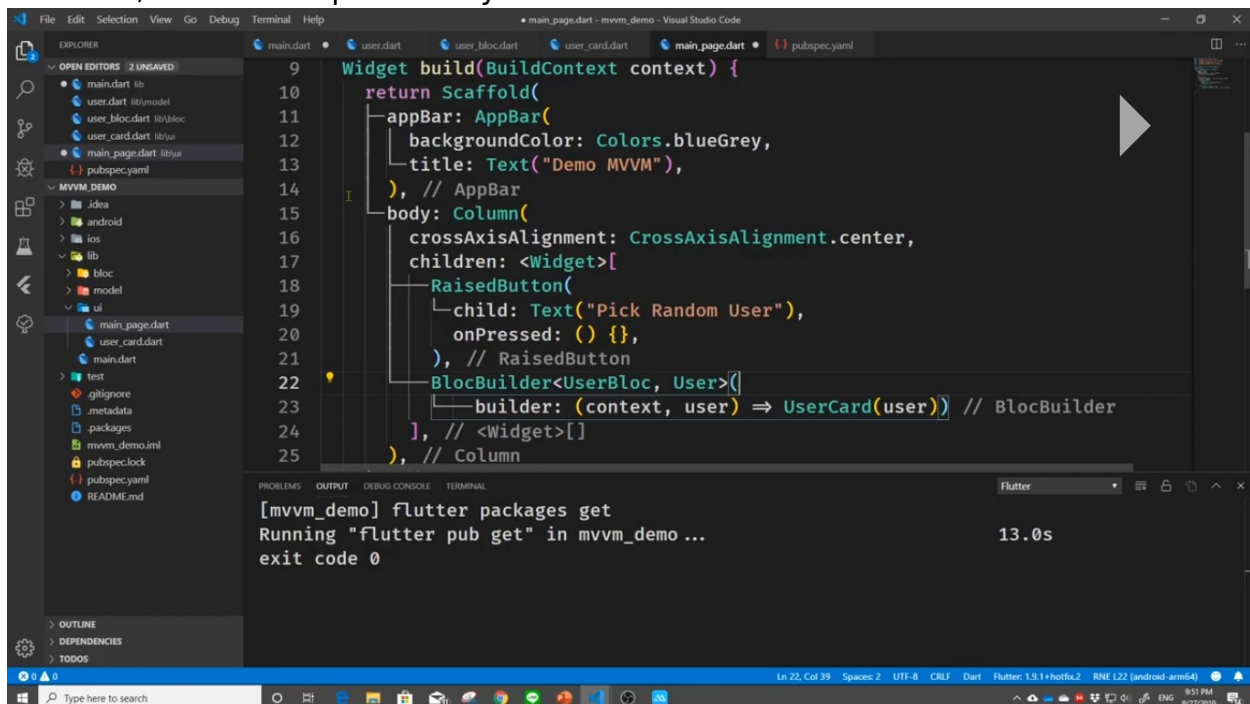
disini user nya belum ada maka kita bungkus



```
Widget build(BuildContext context) {  
  return Scaffold(  
    appBar: AppBar(  
      backgroundColor: Colors.blueGrey,  
      title: Text("Demo MVVM"),  
    ), // AppBar  
    body: Column(  
      crossAxisAlignment: CrossAxisAlignment.center,  
      children: <Widget>[  
        RaisedButton(  
          child: Text("Pick Random User"),  
          onPressed: () {},  
        ), // RaisedButton  
        UserCard(user)  
      ], // <Widget>[]  
    ), // Column  
  ); // Scaffold  
}
```

[mvvm\_demo] flutter packages get  
Running "flutter pub get" in mvvm\_demo ...  
exit code 0

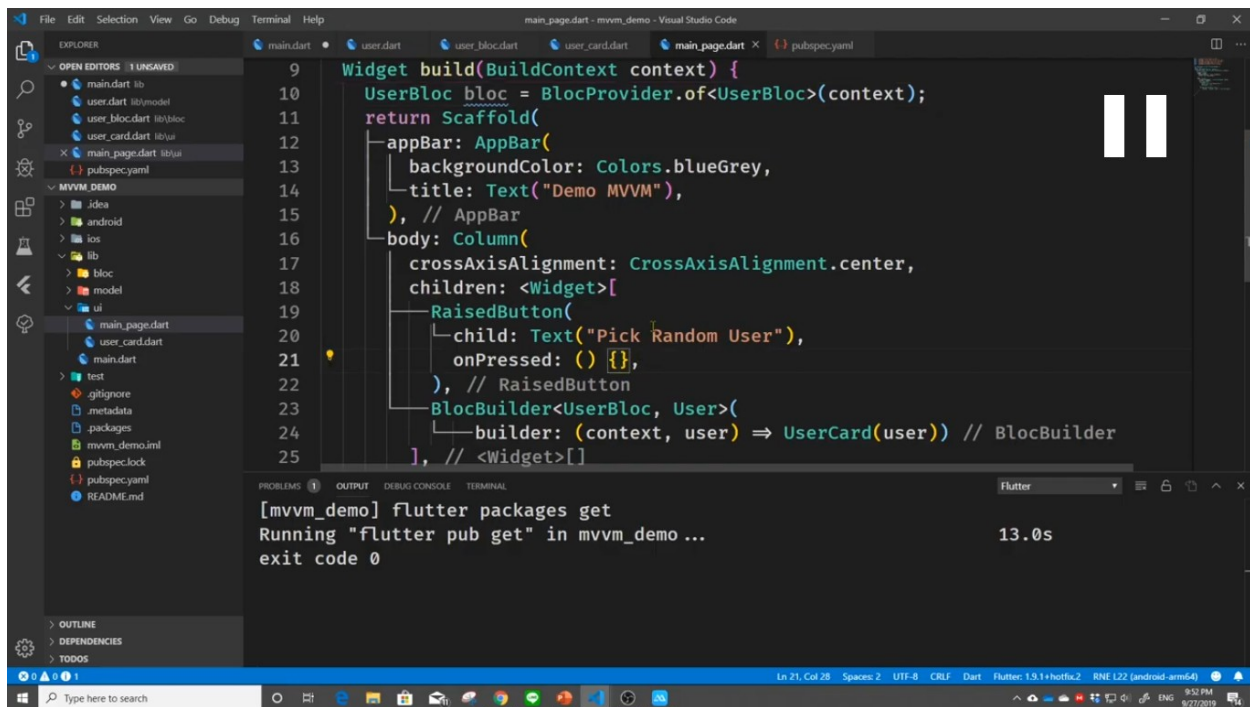
bungkus dgn blocBuilder  
children ganti bulider  
blocBuilder buat tipenya  
UserBloc, User kita import blocnya



```
Widget build(BuildContext context) {  
  return Scaffold(  
    appBar: AppBar(  
      backgroundColor: Colors.blueGrey,  
      title: Text("Demo MVVM"),  
    ), // AppBar  
    body: Column(  
      crossAxisAlignment: CrossAxisAlignment.center,  
      children: <Widget>[  
        RaisedButton(  
          child: Text("Pick Random User"),  
          onPressed: () {},  
        ), // RaisedButton  
        BlocBuilder<UserBloc, User>(  
          builder: (context, user) => UserCard(user) // BlocBuilder  
        ),  
      ], // <Widget>[]  
    ), // Column  
  );  
}
```

[mvvm\_demo] flutter packages get  
Running "flutter pub get" in mvvm\_demo ...  
exit code 0

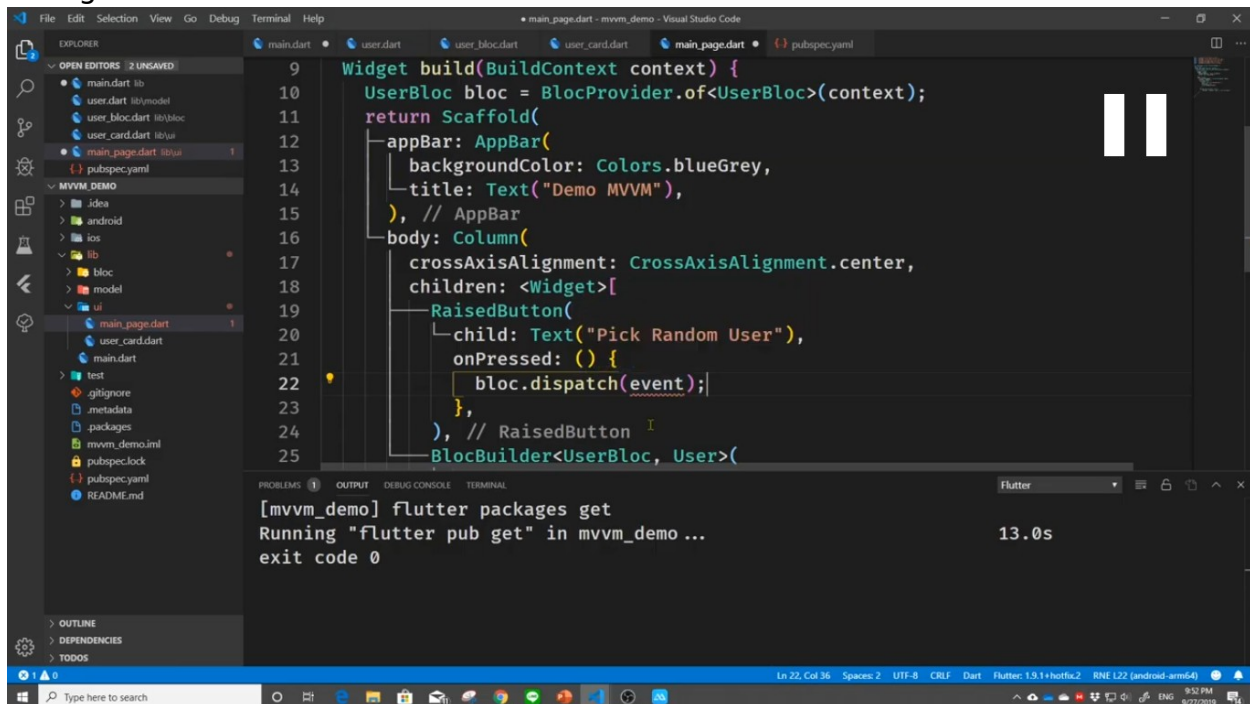
**Didalam** main page buat juga UserBloc bloc =  
Kasih tau tipenya



```
9 Widget build(BuildContext context) {
10   UserBloc bloc = BlocProvider.of<UserBloc>(context);
11   return Scaffold(
12     appBar: AppBar(
13       backgroundColor: Colors.blueGrey,
14       title: Text("Demo MVVM"),
15     ), // AppBar
16     body: Column(
17       crossAxisAlignment: CrossAxisAlignment.center,
18       children: <Widget>[
19         RaisedButton(
20           child: Text("Pick Random User"),
21           onPressed: () {},
22         ), // RaisedButton
23         BlocBuilder<UserBloc, User>(
24           builder: (context, user) => UserCard(user)) // BlocBuilder
25       ], // <Widget>[]
26     ),
27   );
28 }
```

[mvvm\_demo] flutter packages get  
Running "flutter pub get" in mvvm\_demo ...  
exit code 0

Di onprased ini kasih tau ketika klik maka bloc.dispatch kasih tau angka nya berapa bilang n random



```
9 Widget build(BuildContext context) {
10   UserBloc bloc = BlocProvider.of<UserBloc>(context);
11   return Scaffold(
12     appBar: AppBar(
13       backgroundColor: Colors.blueGrey,
14       title: Text("Demo MVVM"),
15     ), // AppBar
16     body: Column(
17       crossAxisAlignment: CrossAxisAlignment.center,
18       children: <Widget>[
19         RaisedButton(
20           child: Text("Pick Random User"),
21           onPressed: () {
22             bloc.dispatch(event);
23           },
24         ), // RaisedButton
25         BlocBuilder<UserBloc, User>(
26           builder: (context, user) => UserCard(user)) // BlocBuilder
27       ], // <Widget>[]
28     ),
29   );
30 }
```

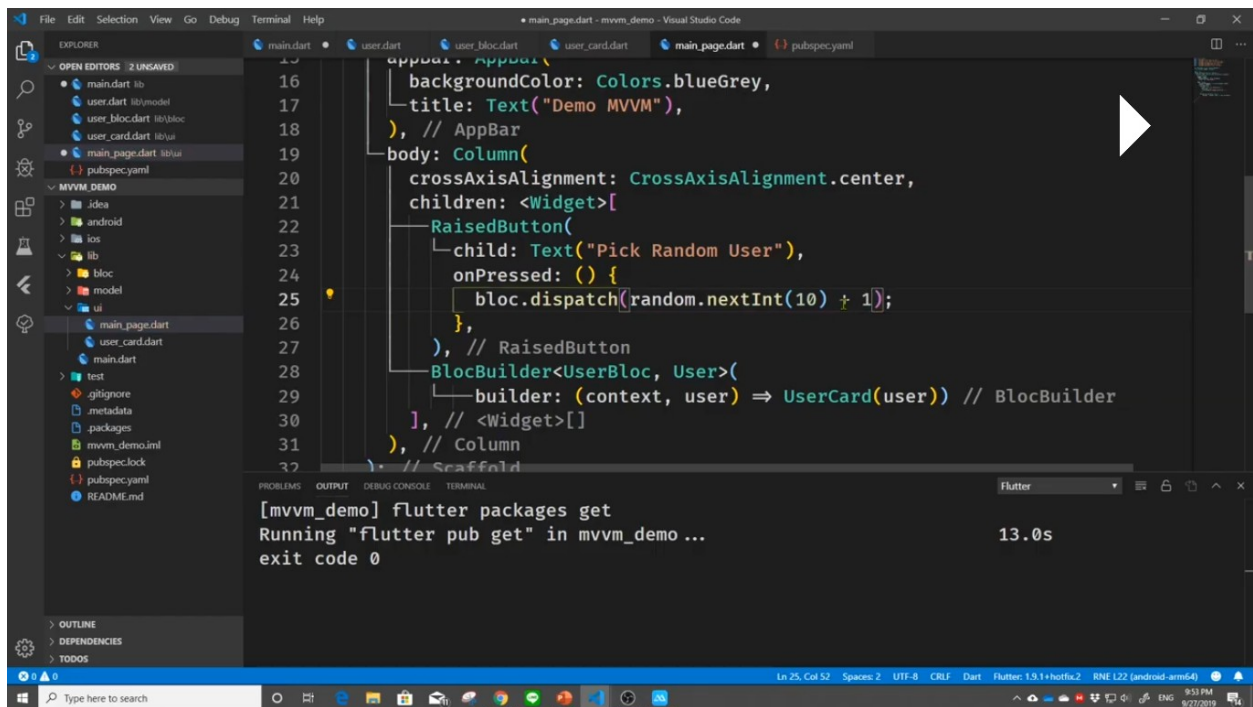
[mvvm\_demo] flutter packages get  
Running "flutter pub get" in mvvm\_demo ...  
exit code 0

Di mainPage buat juga final Random random(); ini ada dart math



Disini maka nya jadi (random.

Dari 10 antara 0 dan 9 maka nya di tambah1

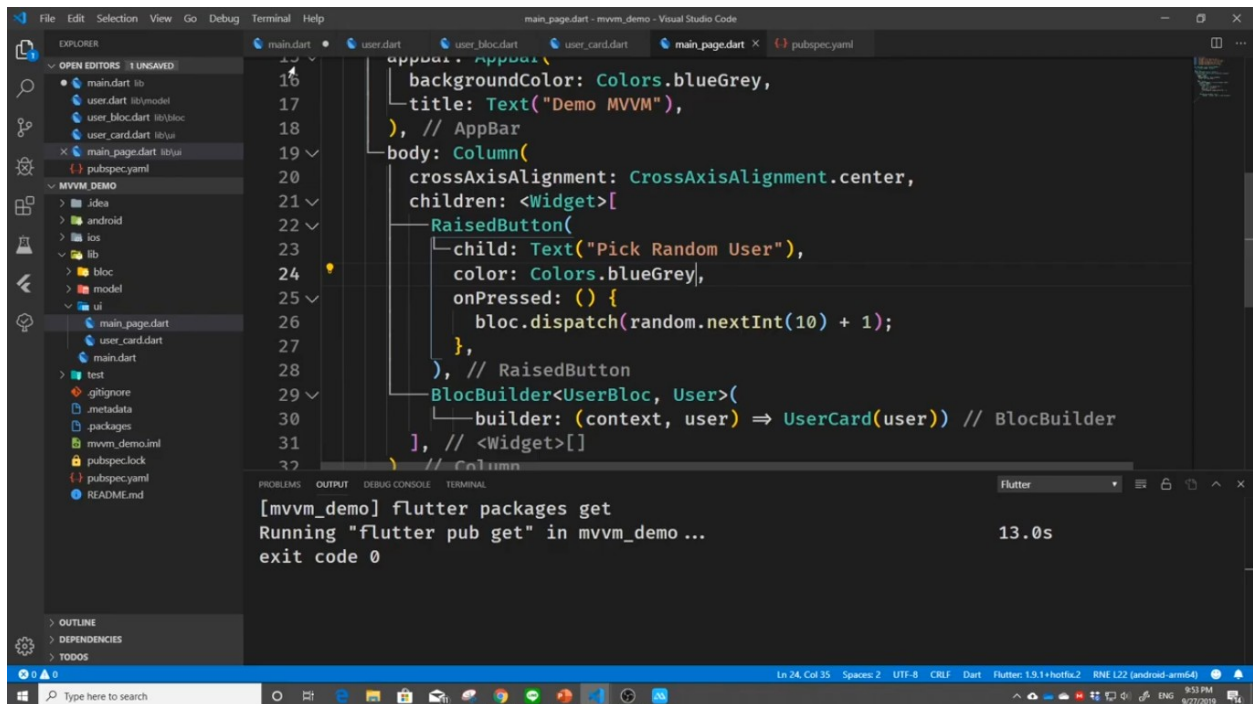


```
main_page.dart - mvvm_demo - Visual Studio Code
16 appBar: AppBar(
17   backgroundColor: Colors.blueGrey,
18   title: Text("Demo MVVM"),
19 ), // AppBar
20 body: Column(
21   crossAxisAlignment: CrossAxisAlignment.center,
22   children: <Widget>[
23     RaisedButton(
24       child: Text("Pick Random User"),
25       onPressed: () {
26         bloc.dispatch(random.nextInt(10) + 1);
27       },
28     ), // RaisedButton
29     BlocBuilder<UserBloc, User>(
30       builder: (context, user) => UserCard(user) // BlocBuilder
31     ), // Column
32   ], // Scaffold
```

[mvvm\_demo] flutter packages get  
Running "flutter pub get" in mvvm\_demo ...  
exit code 0

Flutter 13.0s

Disini color nya kasih



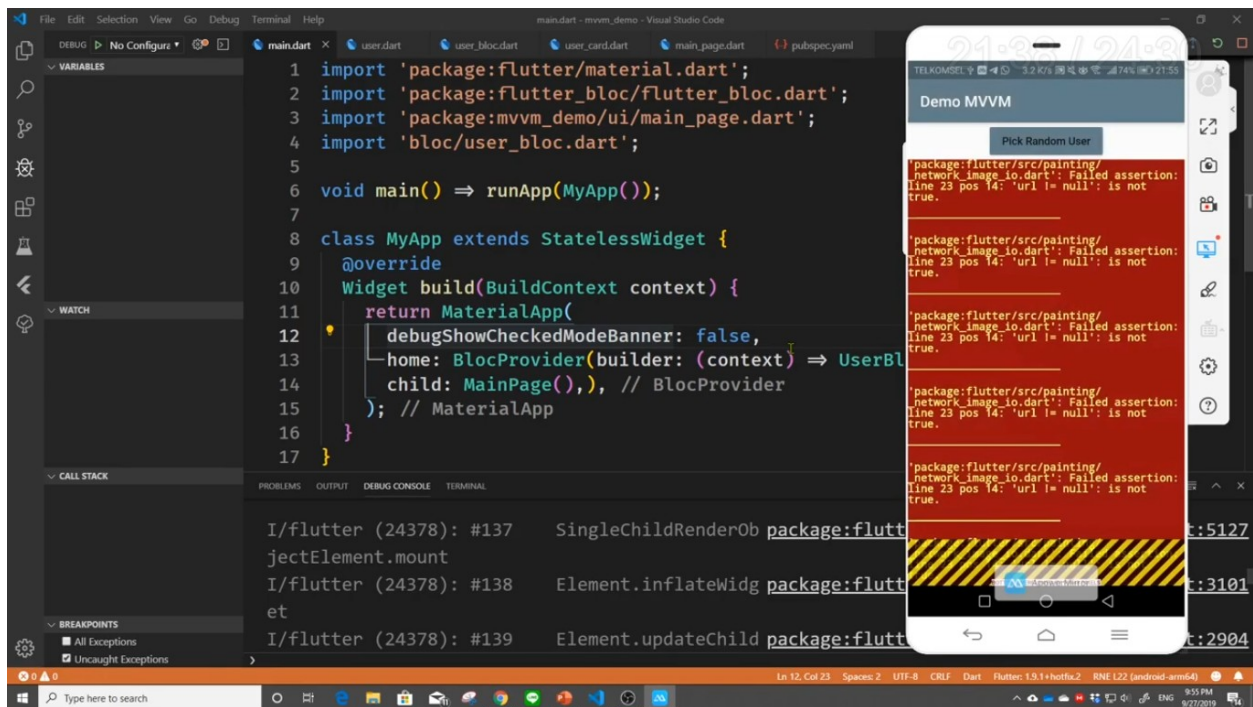
```
main_page.dart - mvvm_demo - Visual Studio Code
16 appBar: AppBar(
17   backgroundColor: Colors.blueGrey,
18   title: Text("Demo MVVM"),
19 ), // AppBar
20 body: Column(
21   crossAxisAlignment: CrossAxisAlignment.center,
22   children: <Widget>[
23     RaisedButton(
24       child: Text("Pick Random User"),
25       color: Colors.blueGrey,
26       onPressed: () {
27         bloc.dispatch(random.nextInt(10) + 1);
28       },
29     ), // RaisedButton
30     BlocBuilder<UserBloc, User>(
31       builder: (context, user) => UserCard(user) // BlocBuilder
32     ), // Column
33   ], // Scaffold
```

[mvvm\_demo] flutter packages get  
Running "flutter pub get" in mvvm\_demo ...  
exit code 0

Flutter 13.0s

Disini kita coba



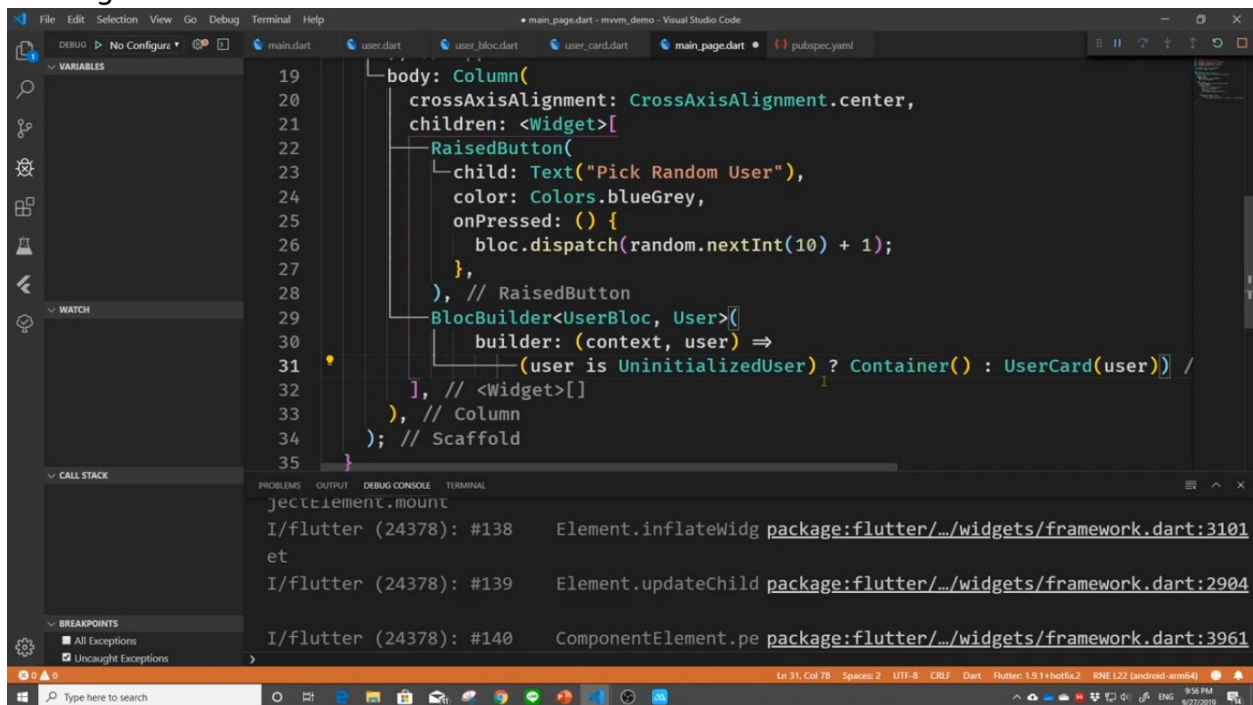


Ini eror karena pertama kali harus class initialUser

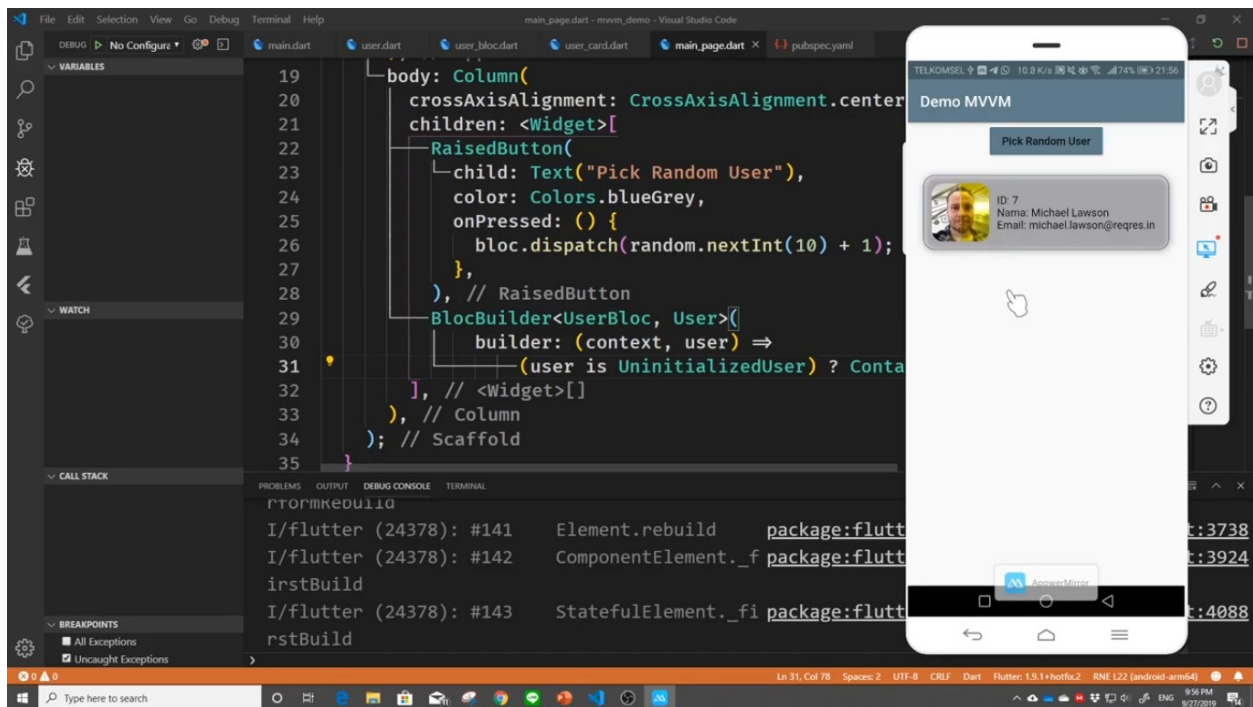
Maka kita ubah dulu

Ke mainPage

Disni kita cek kalau user nya itu uninitail user maka kita buat container() ksong kalau gk ? lalu UserCard



Mka dilihat tidak ada

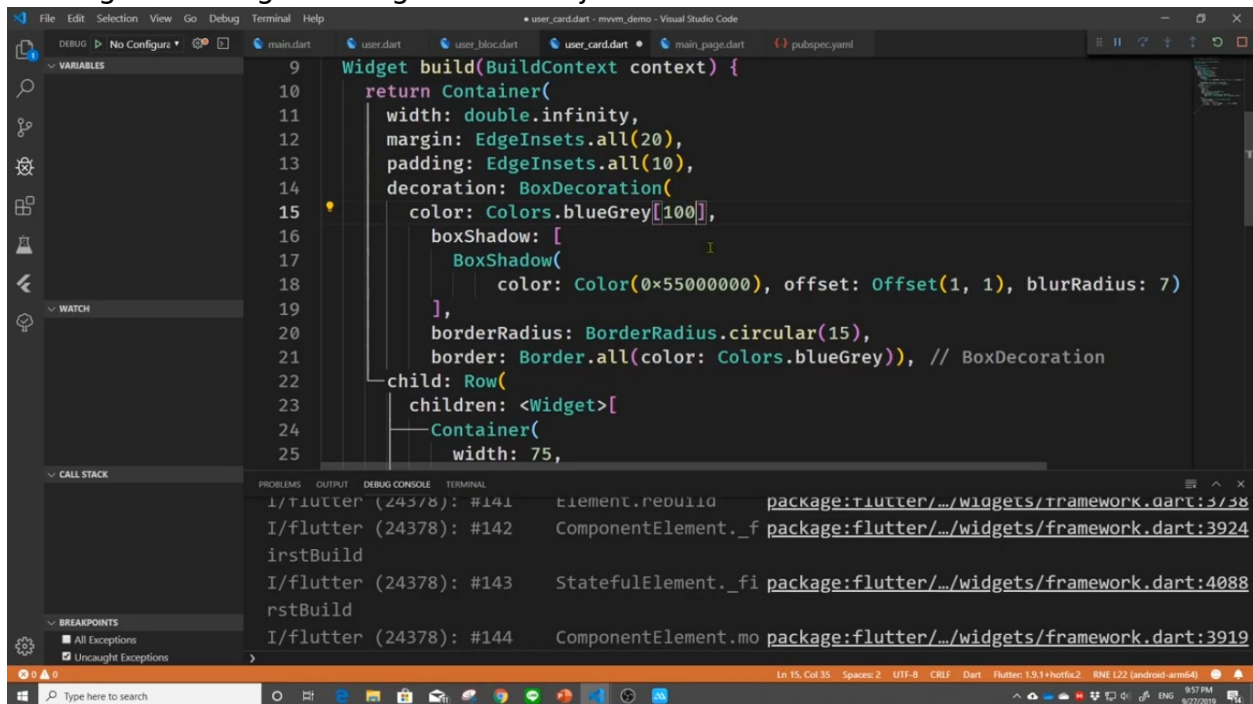


Klik lagi maka tampil lagi

Kira2 seperti ini

Misalkan ui nya jelek ini kasih warna

Kalau ganti ui tinggal enak ganti di ui saja

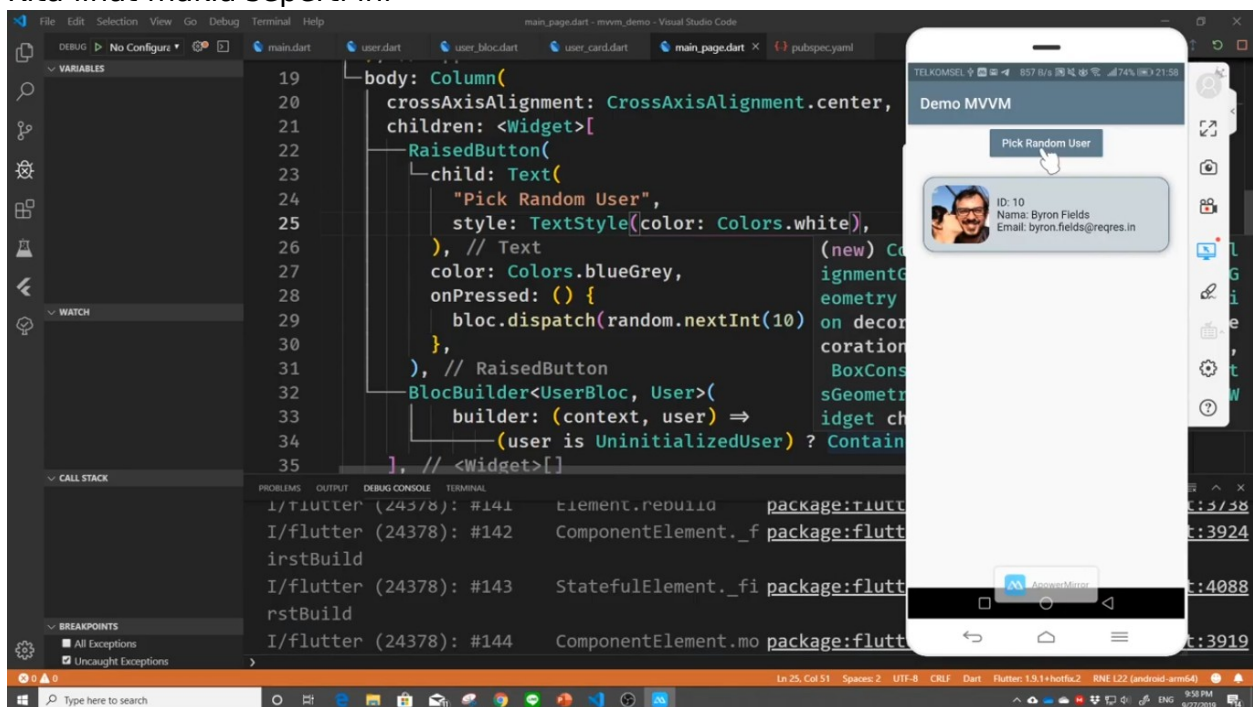


Lalu diraisedButton ganti warna text nya jadi white

```
19 body: Column(  
20   crossAxisAlignment: CrossAxisAlignment.center,  
21   children: <Widget>[  
22     RaisedButton(  
23       child: Text(  
24         "Pick Random User",  
25         style: TextStyle(color: Colors.white),  
26       ), // Text  
27       color: Colors.blueGrey,  
28       onPressed: () {  
29         bloc.dispatch(random.nextInt(10) + 1);  
30       },  
31     ), // RaisedButton  
32     BlocBuilder<UserBloc, User>(  
33       builder: (context, user) =>  
34         (user is UninitializedUser) ? Container() : UserCard(user) //  
35     ], // <Widget>[]  
36 )
```

Call Stack:  
I/flutter (24378): #141 Element.rebuild package:flutter/.../widgets/framework.dart:3738  
I/flutter (24378): #142 ComponentElement.\_firstBuild package:flutter/.../widgets/framework.dart:3924  
I/flutter (24378): #143 StatefulElement.\_firstBuild package:flutter/.../widgets/framework.dart:4088  
I/flutter (24378): #144 ComponentElement.mount package:flutter/.../widgets/framework.dart:3919

Kita lihat makia seperti ini



Klik maka ganti2

Seperti ni car MVVM